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The

Pennsylvania Medical Journal

REPRESENTING

The Transactions of the Medical Society of the State of Pennsylvania at its
Annual Session, held at Pittsburgh, September, 1914.

VOLUME XLIV.
(VOLUME XVIII., OF THE JOURNAL.)

CYRUS LEE STEVENS, A. M., M. D.,
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ADDRESSES.

PRESIDENT'S ADDRESS.

BY EDWARD B. HECKEL, M.D.,
Pittsburgh.

(Delivered at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Fellow members, ladies and gentlemen: Following in the wake of custom and propriety, upon this felicitous occasion, I pause to make my metaphorical genuflex in humble recognition of the distinction which has been bestowed upon me, and, in obedience to the mandates of our ordinances, shall attempt to address you upon a few generalities which are pertient to this occasion. It may be a case of twice-told tales, and, if so, my explanation shall be that it is a psychological fact that we learn only by constant repetition.

Without any further preliminaries, I shall launch a few ideas which have occurred to me. It has always seemed to me that we, as a profession, should have a closer relationship to the public and that we should take the public into our confidence in a more general way than we have heretofore done or attempted to do. The public gets most or all of its medical information through the medium of either purely quack advertising, or cleverly constructed magazine articles, which have for their sole purpose the exploitation of a certain individual or a certain set of individuals, and, as a result, the public is misled and deceived as to the actual state of affairs. There is no doubt but that much good has been accomplished by the Committees on Health and Public Instruction of our county, state and national medical associations, but their work should be supplemented by further publicity through the public press. There is no question but what the public press affords the best possible means for disseminating knowledge, it also affords the only means for reaching the general public. Not infrequently symposia are gotten together in county, state and national medical associations for the sole purpose of enlightening the public, but, as a matter of fact, it fails entirely in its purpose inasmuch as it never reaches the public at all and only part of the medical profession. If these symposia had been epitomized and published in the public press, much real good would have resulted therefrom; on the other hand such publicity through the public press would only be useful if it were done systematically, continuously, constantly and persistently, for, as I have said before, man learns only by constant repetition.

These articles for the public press, upon medical subjects concerning which the public should be informed, should be prepared by the committees on health and public instruction, in such a way that they would simply epitomize what the general profession holds to be true concerning anything which the public would profit by knowing. This would rob the communication of any personality and yet would give it the authority of the profession. These epitomized articles, published at regular intervals, might be welcome material to the public press, for it already publishes syndicated articles emanating from a single individual, whose sole purpose, no doubt, is pure commercialism, and for which the press is willing to pay. But, even if the public press would refuse to publish these epitomized articles, I feel that it would be simply living up to our high standards and altruistic ideals if we were to pay for a limited space in order to disseminate this knowledge.

The Philadelphia County Medical Society under the leadership of its energetic and efficient president, Dr. William Duffield Robinson, has formed a number of committees whose function it is to prepare articles for the public press upon subjects which should and do interest the public. A number of such articles have already appeared in the Philadelphia *Public Ledger*. Each article bears the stamp of approval not only of the committee but of the entire county medical society. No names of individuals appear, only the names of the respective committees.

There is nothing strikingly new about this idea, for the Royal College of Physicians of England took it upon itself to issue a manifesto concerning the beneficent effects of vaccination against smallpox as early as 1754. I quote the manifesto:—

> "The College, having been informed that false reports concerning the success of inoculation in England have been published in foreign countries, think proper to declare their sentiments in the following manner, *viz.*; That the arguments which at the commencement of this practice were urged against it have been refuted by experience; that it is now held by the English in greater esteem, and practiced among them more extensively than ever it was before, and that the College thinks it to be highly salutary to the human race."

The medical profession has always influenced public opinion more or less, even without any regular, systematized publicity. I venture to say, without fear of contradiction, that all of the advancement which has taken place in the better hygienic surroundings, etc., has been started by the medical profession, and, as a rule, after the medical profession has hammered at the public persistently for years, their ideas have been taken up by the politician and put into execution, and the political party in power has reaped the glory of the achievement, and frequently alludes to them with great oratorical effect when in search of votes for a coming election. Take for example the matter of pure water in the community in which we have the privilege of meeting as guests. The records of the Allegheny County Medical Society show that the subject of pure water was agitated as much as fifty years ago, and for the last thirty years the profession of this community has been busy teaching the public the relationship between bad water, milk, etc., and the spread of typhoid fever. So that the real reduction in the number of cases of typhoid fever in this community is not alone the result of filtered water, but also the result of the educational efforts of the medical profession, for the records of the city of Pittsburgh show that in 1912, when Pittsburgh proper had been receiving filtered water for a period of two years, the number of cases of typhoid per 100,000 of population fell from 1352 in 1908 to 54.6; while at the same time, in old Allegheny, which was not receiving any filtered water, the number of cases of typhoid per 100,000 population fell from 435 in 1910 to 78.4 in 1912, and in 1913 the number of cases per 100,000 of population in Pittsburgh proper was 83.9, while that of old Allegheny was only 77.4 without filtered water. Old Allegheny, even at the present time, is getting only about ninety per cent. of filtered water. Therefore, in looking over these statistics, my assertion that the diminution of typhoid is not purely the result of filtered water can scarcely be gainsaid.

In fact, the medical profession is the only set of men on the face of the earth who are constantly doing everything within their power to annihilate their own business.

Medical education is a subject which is always timely and full of interest, yet I shall pass it over rapidly, for our state no longer follows, but is looked upon as a leader and a model for other states to follow and copy. Under the leadership of our efficient and energetic colleague, Dr. Baldy, our state has risen to an eminence never before attained. The single board, as now constituted, has practically solved the problem of sects and cults in medicine, by which it demands that everyone who expects to practice medicine in any form whatever, either with or without drugs or what not, must enter the profession through a common door, for science knows no sect nor creed, it is simply the classification of facts and knowledge, and is the same the world over. I can not but feel that, if the public only knew the real purpose of this bit of legislation, they would be wildly enthusiastic for its enforcement.

The human mind is so constituted that one of the first questions it asks, when the physical body is ill or is not functionating properly, is, "What is the matter with me?" So that the most illiterate layman demands first a diagnosis before treatment. And the next question which the human mind will ask is, "How soon will I recover?"

Drugless therapy is not new. For years and years the best-trained medical minds have been more concerned with the diagnosis and prognosis, than with filling up their patients with useless drugs. Many years ago, our own Oliver Wendell Holmes said that if all the drugs were dumped into the sea, it might be worse for the fishes, but better for men. He also said that, even if drugs were not used at all, the well-trained physician would still be in demand to make a diagnosis and give a prognosis. Without proper preliminary training or without a knowledge of human anatomy, physiology, and physiological chemistry, how can it be possible to meet the first requirement, to make a diagnosis in order to relieve the ills of the human body.

It is gratifying to observe the progress which has been made in the dissemination of knowledge in relation to the spread and control of cancer, and, although the actual cause of cancer still remains an unknown problem, we do know that it is a curable disease if recognized early, and, if found in accessible places, in the hands of a skilled surgeon it can be successfully, permanently and definitely removed and cured. And, thanks to the advancement of the technic and the use of roentgen rays and radium radiations, it is even possible to control and cure cancer in regions inaccessible to the knife. It is the duty of the profession to attack this subject in real earnest, so that it can no longer be said that "the vast majority of early operations have been effected as a matter of accident rather than of deliberate action."[1] To my mind, the only way effectively to educate the public along these lines is by constant and persistent publicity through the public press.

One of the most pernicious evils grafted on our profession is the matter of fee splitting, concerning which so much has been said and written. It has even excited so much interest that articles have appeared in the lay magazines. Our own profession has frequently discussed the subject only to condemn it in the strongest possible terms. It has even gone so far as to exclude from membership, men known to split fees, in our county, state and national medical societies, or if done by one of its members it is cause for expulsion. But in spite of all this, there are still rumors that the fee-splitting habit has not ceased to exist. This same evil, in practically the same form, has existed in other walks of life, and was only stopped finally by state legislation, so that it seems to me it would be only proper for our profession, in accordance with its high ideals, to take the initiative in this matter and seek the enactment of proper state legislation, which would make the matter of fee-splitting a misdemeanor, punishable by fine or imprisonment or both, and thus publicly put our stamp of condemnation upon this pernicious practice.

No doubt, some well-meaning but misguided individuals will again raise a protest against what is popularly termed vivisection, but which in reality should be called experimental medicine. It seems ridiculous to enter into a defense of this branch of medicine, for it seems to me that any normal, well-informed mind knows of the countless benefits to humanity as the result of this branch of medicine. For, after all, the whole subject practically resolves itself into "never to guess when it is possible to know," and that, "one fact is worth a thousand arguments." It is said of the immortal Jenner that, when talking with his preceptor, the famous John Hunter, about what he thought and what his hopes and fears were of the possibilities of substituting vaccination for inoculation, Hunter replied "Don't *think*, Jenner, but *try*." These same principles are followed out without hesitation in business. No banker would for a moment take for granted or *think* that the bank had certain assets, but such assets are regularly gone over and actually counted, so that they may *know* what they have. I am sure that, if it were necessary to sacrifice the lives of a few guinea pigs, or cats or dogs or what not, in order to arrive at the knowledge of the "bank's assets," such a sacrifice would be made without a murmur. Our strikingly diminishing death rate is the direct result of this branch of medicine. The Census

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[1] Dr. F F. Simpson, address delivered in Boston, Mass.: "The Work and Purposes of the American Society for the Control of Cancer."

Bureau has recently published some startling figures, *e. g.*, in 1901 to 1905 the average death rate was 16.2 for each thousand, while in 1913 it was reduced to 14.1; or to make the same statement still more striking, there would have been 134,623 more deaths in 1913 if the same rate had existed as for the years 1901 to 1905. This whole subject has been very popularly epitomized and put into verse by Dr. Samuel M. Brickner, formerly associate editor of the *New York Medical Journal,* which I take the liberty to quote:—

ANTIVIVISECTIONIST MERCY.

The counterpane that covers motherhood
Too often still becomes a shroud entwined:
"Let not this sacred act demand our blood
But spare the dog and all his sacred kind."

Our little children fall a hideous prey
To childhood's scourge, and broken, bent, they lie:
"Blot out this epidemic from the day,
But spare the monkey and the stable fly."

The White Plague stalks with poisoned breath
And leaves men prostrate like a broken twig:
"Oh! spare us from this poignant, living death,
But do not touch the precious guinea pig."

From overseas the pest comes like a ghost,
And settles grinning on our household mats:
"Oh! save us from this devastating host,
But spare the poor mosquitoes and the rats."

A growth malign, with tentacles a score,
The fairest and most useful friends will claim:
"Oh! let us suffer from this scourge no more,
But spare the mouse, we ask, in Mercy's name."[2]

It is scarcely necessary for me to say anything at this time upon the benefits of medical organization, except to say that this gathering of medical men, who have willingly left their practices and the pursuit of their vocations to come here and spend a few days for the sole purpose of better preparing themselves to meet the demands of their vocation and to be better prepared to serve their fellowmen, puts the lie on the statement, so frequently heard, that medical societies, or the medical profession, is a trust. In one sense, the medical profession is a trust—for it not only trusts in God, but it trusts everybody. Medical organization not only elevates the standard of medicine, but also elevates the standard of mankind, for there is nothing which tends so much for the betterment of social conditions as the frequent intercourse of men, and very frequently men are misjudged because they are not known, and the medical society not only gives an opportunity for the development of the physician, but also for the development of the man, for the medical society constitutes a great clearinghouse where all knowledge is brought to light and classified in its proper place, so that, that which is good may live, and that which is useless may be put aside. In this connection, I am reminded of a story of a hunter who had spent several days on the plains in search of big game without success. After several days, while sitting about the camp fire at dusk, there suddenly appeared an object on the distant horizon, which immediately attracted the attention of the hunter. He instinctively reached for his rifle, while keeping his gaze fixed upon the object. After watching it intently for several minutes, he decided it was a bear. He raised his rifle to take aim, but, as he did so, he suddenly felt that which he thought was a bear assumed the form of a human being. He dropped his rifle and gazed intently at the object, which was approaching him. After a moment or two he was satisfied that it was a man, and as the figure drew nearer it proved to be not only a man, but actually his own brother. So it often is in our relation with our colleagues—the one who appears a bear, on closer inspection, acquaintance, and intimacy, proves to be not only a man, but a brother. For after all:—

"What is Fortune, what is Fame?
Futile gold and phantom name,
Riches buried in a cave,
Glory written on a grave.

"What is Friendship? Something deep
That the heart can spend and keep:
Wealth that greatens while we give,
Praise that heartens us to live."[3]

I can not refrain at this time, while we sit peacefully together, to advert to the struggle which is now going on across the sea, and only do so to express the hope that the nations which have given to humanity such men as Lister, Pasteur, Koch, Virchow, Behring, Ehrlich and a host of others, may soon again mingle peacefully together in the pursuit of knowledge for the amelioration of human suffering and the advancement of mankind.

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[2] *Lancet Clinic,* May 23, 1914.

[3] "The Talisman," Henry Van Dyke, *Outlook,* September 9, 1914, p. 90.

ADDRESS OF WELCOME.

BY JOHN A. HAWKINS, M.D.,
President of the Allegheny County Medical Society, Pittsburgh.

(Delivered at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Last night I had a dream: Many years ago, one of the members of this society, after listening to a lawyer spending hours in telling in court what might have been said by a doctor in a few minutes, introduced and had incorporated in the by-laws that addresses, with the exception of the president's and special addresses, should be limited to ten minutes. You will therefore hardly be tired with my few remarks.

It affords me great pleasure, as the representative of the Allegheny County Medical Society, to welcome you again to Pittsburgh. Some of you have attended previous meetings held in this city but I doubt if there are any here who were present at the first meeting held in Pittsburgh in 1867.[1] The Allegheny County Medical Society and I were infants at that time. But to what a great body has our society, one of the component parts of your organization, grown! But a few of those present are familiar with the early history of the local society. Organized in 1865 with but a few more than enough members to fill the offices, it now is composed of more than 1100 members. Then the society needed the doctor; now the doctor needs the society. It was then a hardship to attend meetings as even where we now stand was but a field and the horse the universal means of local transportation and East Liberty was quite a distance from the city. How many are there in this audience who recall such illustrious names as A. H. Gross, H. T. Coffee, Thomas J. Gallaher, G. D. Bruce, J. C. Maginni whose only portrait was made after his death, and Nesbit McDonald. A few here remember Dr. E. A. Wood, James McCann, M. O. Jones, Thomas W. Shaw, Andrew Fleming, S. N. Benham, James King, William H. Daly, who, as a friend of General Miles, showed the world how the governments were robbed and the health of her soldiers ruined by embalmed beef. It was this agitation which was the real beginning of the pure food laws. Later, we find the illustrious names of J. M. Stevenson, J. D. Thomas, J. B. Murdoch, Thomas Mabon, W. M. Brinton, W. F. King, W. S. Huselton, J. J. Green, J. M. Duff and Francis LeMoyne, whose father at Washington, Pa., built the first crematory in the world.

From 1865 to 1896, the Allegheny County Medical Society had had thirty-one presidents, only six of whom, Drs. C. B. King, J. M. Batten, W. F. Knox, W. S. Foster, T. D. Davis and J. C. Lange are still with us. So you see, we are growing in years.

This society has given your state society nine presidents, they being Drs. James King, A. M. Pollock, R. B. Mowry, E. A. Wood, J. B. Murdoch, W. S. Foster, T. D. Davis, A. Koenig and the present incumbent, E. B. Heckel, besides numerous vice presidents, secretaries, etc. This is the pedigree of the society which bids you welcome to-day.

The Committee of Arrangements from our society proposed to try to entertain you in a manner befitting our city. You will recall that Pittsburgh is more than a city of smoke and dirt. Like the natives of Erin who date all time from the "Great Wind in Ireland," we natives date time from epoch periods—the discovery of the Point by the Indians, and the cutting operation on the Grant's Hill Hump some years later. These, together with Carnegie Technical Schools and Institute, the University of Pittsburgh with its A+ Medical School, the Soldiers' Memorial Building, 1200 acres of parks, a library of 310,000 volumes, freight yards holding 60,000 cars and our mills have made Pittsburgh famous.

The Diplodocus, the Allegheny Observatory, Drs. Holland and Brashear, have each contributed largely to Pittsburgh's educational fame. This city was for years the home of Prof. Langley, through whose early experiments the aeroplane was made possible. His failure to fly at that time was not due, as was proved after his death, to the plane, but to the undeveloped gas engine of his time. We have also some well-paved streets and some others, we also have a

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[1] Drs. W. S. Foster and W. F. Knox, two of those at the session in 1867, were in attendance at the 1914 Pittsburgh Session.—J. A. H.

Morals Efficiency Commission and expect some day to be some town. We have around here 500 miles of improved country roads and their cost of $10,000,000 has been a good investment.

But why go further in puffing our own sails when everywhere you will see evidence of our energies and progress and we assure you that this same energy is being expended in endeavoring to make you feel at home with us. Therefore, we again welcome you to this the seventh meeting of the state society in Pittsburgh and wish you a pleasant and profitable visit.

DESCRIPTION OF CARNEGIE INSTITUTE.

BY W. J. HOLLAND, PH.D., LL.D.,
Director of the Carnegie Institute, Pittsburgh.

(Delivered at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

I am not a "Doctor" in the sense that it is my function to deal with the ailments of the *corpus vile,* but if your philosophy, or science, or divinity need doctoring "I'm your man." In spite of which, having once "read medicine," I feel as if in a sense allied to your profession, and having made a special study of "old bones" and been a Professor of Comparative Anatomy, I am glad to consort with you who are combating the fleshly ills of "recent mammals."

As I sat listening a few moments ago to the strains of the organ, my mind went back to the year in which I was born, of which I remember nothing, the year 1848; and I recall the fact that in that year a sailing ship brought across the Atlantic a poor Scotch weaver, his wife, and their two little sons. The good man had been compelled to leave Scotland because of the introduction of the power-loom into the weaving industry, and he came to the Land of Opportunity that he might find a home for his family and a "fighting chance" for his sons. The oldest of these sons has for a third of a century been my friend. I learned to know him long after he had escaped the period of boyhood. Those who know him well do not measure him by the size of his purse, which is one of the biggest in the world; but by the size of his heart, which is also one of the biggest in the world. He is an honor to Scotland and he is an honor to America, and you are met here this morning in one of a multitude of institutions which are the product of his beneficent provision and his soulful generosity.

I have been asked to speak about the Carnegie Institute. The building, in which we are, covers one and a half acres more than the Capitol in Washington, and then there are besides the Technical Schools; I do not know how many acres they cover, and they keep on growing and growing. My friend, Mr. Fletcher of the British Institute of Architects, was sent over some years ago to study the museums of America. In his published report he speaks of the Carnegie Institute as being "the world's greatest department store of culture." He was possibly a little satirical in this remark, but you will realize, as you go about through these halls, that the imparting of knowledge and of mental refinement is the great end of this institution, and that this work is being carried on in a very large way.

The genesis of this institution can be traced back to the library. Mr. Carnegie as a boy had not the advantages which many others have had, and with that indomitable will, which characterized him, he set to work to secure his own education through reading and converse with his fellow-men. He thoroughly succeeded. Knowing him well, I can say that Mr. Carnegie is indeed in the very highest sense "an educated man." His mind is thoroughly absorptive. He is the possessor of a wonderful memory. Throughout his life he has been a diligent reader of the best books. The range of his reading is very great, extending from the writings of the old Greek philosophers down to the latest modern essayists. The historian Sallust tells us that one of the characteristics of Jugurtha was his fondness for the society of men of learning and achievement. The same thing is true of the founder of this great institution. He enjoys meeting and conversing with those who are worth knowing, and he has in part attained learning in that way. After all, that is the best way of securing an education. My good friend, President Seelye of Amherst, used to say that education does not come so much from contact with books as from contact with men. That is true.

Now let me come back to the institute, the product of the planning and the generosity of this wise and highly gifted citizen. The library was the nucleus about which everything else has grown. The central library, which is under the roof of the building where we are assembled, has in its stacks to-day over three hundred thousand volumes. In the library connected with the museum there are about twenty thousand volumes more, including certain works which it has not been felt that the general library could purchase, but which are absolutely necessary as work of reference for the student of science. Connected with the general library there are eight branch libraries scattered through the city. The books in these libraries do not stand idle, but are constantly in use. The circulation has risen to astonishing proportions.

To the library has been added this beautiful hall in which we are gathered. It seats twenty-two hundred people. It is filled every Saturday evening and Sunday afternoon nearly to overflowing by men and women, who gather to listen to the strains of music rendered by one of the most consummately skillful organists in this country. There is also a smaller hall with accommodations for seating six hundred persons, intended for the use of the various scientific societies of the city.

Under this roof is also the museum. A museum is an encyclopedia, in which things, rather than pictures of things, are assembled for purposes of instruction. The scope of our museum is very wide, covering all the sciences. We have endeavored to exercise in the conduct of this department of the institute a wise eclecticism, securing representative objects in every branch of science, while seeking to avoid wearying the beholder by an undue multiplication of exhibits. In our work we have been forced to carry on, as all great museums must, a great deal of original research. This work has covered a broad field. From time to time we have sent our expeditions to various parts of our own country and to other lands. In the western world collections have been made for us to illustrate the truths of science, from Alaska in the north to Patagonia in the south. One of the largest collections of the fishes of South America is here, and one of the largest collections of the fishes of the eastern shores of the Pacific, from Korea and Japan to Formosa, is also here. The types of multitudes of species of fishes described by Professor Eigenmann and Professor D. Starr Jordan are deposited here. One of the largest collections of the fossil fishes of Europe is here. Our collection of vertebrate mammals from the Miocene and of Jurassic reptiles is probably the largest and most complete in existence. Our collections of birds, insects, plants, and mollusca are among the greatest in the new world and are rich in types. All of this has been the growth of the last twelve or fifteen years. Our work has of necessity been to a certain extent exploratory. We have been encouraged by the founder of the institute to enter upon certain fields as yet but little investigated, to the end that the sum of human knowledge may be increased, while knowledge is also diffused through our exhibits and our publications.

Then, I must speak of the department of the fine arts, also under this roof. You will visit the noble galleries of sculpture and architecture and the great halls in which are exhibited representative works of modern artists. This department of the institute is doing much to promote culture and taste. Its influence is very widely felt throughout the schools and in the homes of the community.

Beyond these departments of which I have spoken and which are under the roof of the building where we are assembled, are the great technical schools, the latest growth connected with the institution, but by no means the least in importance. The total enrollment of pupils during the last year was about three thousand. The object of the generous founder is through these to provide opportunities for those who have not large means to acquire useful knowledge, which shall better fit them for the battle of life.

The whole complex of institutions has, as you see, one great end, the impartation of knowledge, and thus the impartation of power; the impartation of culture, and thus the increase of happiness.

To this great institution it is my pleasant privilege to welcome you to-day, and if there is anything which is hidden from public sight in our laboratories, which nevertheless might be of interest to you as scientific men, I desire to say that the officers of the institute stand entirely at your service as guides to the innermost recesses.

Permit me to say in conclusion that I am proud of the fact that I have been permitted to meet you again to-day. I remember having been invited to speak to you a number of years ago, on the occasion of your last gathering in Pittsburgh, although I have entirely forgotten what I may then have said. I conclude, as I began, by saying that I feel a special interest in the medical profession. For a time, while hesitating as to the choice of a calling in life, I read medicine. It may amuse you to know that on one occasion I was made a ship's doctor. When a member of a scientific expedition to Japan in 1887, the captain of the steamer, hearing me accosted as "Doctor," came up to me, informing me that he was "glad to have a doctor on board," handed me the keys of the medicine-chest, and requested me to look after certain sick sailors in the forecastle. I took the keys and looked after the sailors, who were merely suffering from the results of shore-leave, and required less grog and more tea and crackers. Everything went well until we got to Yokohama, when in some way or other the story was circulated that a well-known American physician had arrived. I was approached by a blushing young Englishman, who requested me to preside at the advent of a young heir who was expected. I then had to confess that my specialty was zoölogy and not gynecology, and that I was a Ph.D. and not an M.D.

Once again, gentlemen, I welcome you to the Carnegie Institute.

SHORTAGE OF DRUGS.

In view of possible drug shortage, physicians should bear in mind that many proprietary foreign preparations are made and sold in the United States under their descriptive names, thus dionin as ethyl morphin hydrochlorid, urotropin as hexamethylenamin and diuretin as theobromin sodium salicylate.—*Jour. A. M. A.*, Aug. 22, 1914, p. 692.

ORIGINAL ARTICLES.

ESTABLISHED VALUES IN DIETETICS.

BY LAWRENCE LITCHFIELD, M.D.,
Pittsburgh.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

What physician of twenty-five years' experience will not admit that, as the years have slipped away, they have taken with them many of the drugs with which he armed himself in his youth? During the same time, who among us has not gained a growing insight into the vast importance of dietetics? Not the old-fashioned dietetics of our school days and, I regret to say, of most of the textbooks still being published, which offer us traditional and groundless diets for every known disease or condition, but modern, real dietetics, based on properly controlled and recorded observations of well-trained clinicians and on the findings in the laboratories of physiology and biochemistry—the dietetics of Liebig, Voit, Rubner, Hoesslin, Pflüger, Atwater, Benedict, Chittenden, Folin, Lusk, Mendel, DuBois and others. The time has come when the benefits conferred upon the human race by Jenner, Von Behring, Koch and others, in the prevention and control of infectious and contagious diseases, should have their counterpart in the management of diseases and disorders of metabolism. We have found that a large proportion of the cases we are called upon to treat are in reality problems in nutrition.

Were I to write a book on the treatment of disease, I should begin it with a chapter on "Starvation," the diseases and conditions in which it is encountered, and how it should be treated. The list would include typhoid, tuberculosis, rickets, diabetes, and many others. How often it happens that the consulting physician finds an adult patient struggling with a chronic disease, on a diet that would not support an infant. The patient's condition has become more and more unsatisfactory, and the attending physician has tried to improve it with tonics and stimulants, omni-peptone, sanguinoloids, and liquid patentoids, instead of resorting to suitable preparations of milk, eggs, bread and butter, sugar, and meat. If we furnish the proper raw materials, Dame Nature can very well make her own remedies in a vast majority of diseased or morbid conditions.

In health, the appetite is generally a reliable guide to the needs of the organism, but it is not an expression of general cellular hunger, but is due to local conditions in the gastrointestinal canal (Lusk). But in disease, appetite is often in abeyance, and the nutrition of the cells and the welfare of the stomach and the kidneys are at the mercy of the attending physician. In many cases, a knowledge of the proper kind and proper dosage of food is more important than any knowledge of drugs. An appreciation of the physiological demands of the organism necessitates the recognition of both quantitative and qualitative needs. We must carefully study food stuffs, their composition, their preparation, their digestibility, and their effects. We must know, in a general way, their caloric values and their content in protein, fat and carbohydrate, also their purin content. This task is not as hopeless as, at first glance, it may appear. Food stuffs naturally divide themselves into two classes—the first, those articles which are given for purposes of nutrition, dynamic food. In daily practice this is not a large class. It has been summarized above as milk, eggs, bread and butter, sugar, and meat. These are the articles of which we should know the composition. It is from these that both nitrogenous and calorie needs are chiefly supplied. They may be conveniently grouped on cards for the use of patients or nurses. Their approximate caloric values should be given, as well as their purin content, as high, low, or "purin free," and their proteid content. Articles of which the usual portions contain about the same number of calories may be put together, and grouped as high proteins, low proteins, and protein-free. The last group is very important and easily remembered,—butter, fats, oil, syrup, and sugar.

The second class comprises a large number of articles of which the composition is negligible, but of which we should know the mechanical effects and the proper method of preparation, and, in certain cases, the presence of desirable or undesirable acids or salts. This class corresponds to what the dairy farmer calls "roughage," and comprises a large proportion of the vegetables and fruits, such as lettuce, celery, greens, squash, cabbage, turnips, melons, grapes, apples, oranges, and the like.

We must not only prescribe a suitable diet in the individual case, but we must see that it is eaten, quantitatively as well as qualitatively.

Nervous anorexia, as well as a lack of character and will power, in our patients, often make this last obligation very hard to carry out. I have a graded series of cocktails, to which I sometimes resort in such cases; first, freshly expressed juice of slightly broiled beef, given twenty minutes to a half hour before meals; second, a sandwich made of a dry roll with caviar or anchovies eaten a half-hour before meals with thorough mastication and without taking any liquid; third, a small glass of Dubonnet sipped before dinner, or with the first part of the meal; or, fourth, a dry Orange Blossom, Bronx, or somewhat diluted Vermouth or Martini. If these expedients are followed by satisfactory results, they are certainly justifiable in selected cases.

Diseases also may be divided into two classes for dietetic consideration. First, a moderate number of diseases or abnormal conditions in which food may be used specifically: Constipation, obesity, marasmus, gastric and duodenal ulcers, gout, eczema, scurvy, diarrhea, enteroptosis, hyperchlorhydria, diabetes mellitus, arteriosclerosis, beri-beri, and certain diseases of the heart, kidneys, liver and pancreas. This class is slowly, but steadily, growing. For the dietetic management of these cases, I have carefully prepared diet sheets, containing everything which is not contraindicated. Thus I provide for that variety which is indispensable to successful dieting. Due emphasis is put upon those articles which are particularly indicated.

The second class comprises all diseases and conditions not in Class 1; to wit, all contagious and infectious diseases, as well as chronic bronchitis, septicemia, furunculosis, chronic arthritis, pernicious anemia, and many others. For diseases in this large class there are no specific diets. Here we must study the individual patient and, with our knowledge of food stuffs and metabolism, we must work out for each case that diet which best furnishes the organism with the vital forces needed for maintenance, repair, and aggressive warfare against invading microörganisms.

Not less important than a consideration of the diet in disease is the consideration of diet in health. A man's efficiency does not rise in proportion to the amount of food he consumes, and yet a vast majority of the human race eat as though they believed it did. The traditional importance of excessive proteid feeding, when hard physical work is to be done, has been proved a fallacy by the painstaking and most admirable work of Chittenden and his followers. Chittenden says, in "The Nutrition of Man," page 264, "Physiological economy in nutrition is not a myth, but a reality—full of promise for the welfare of the individual, and of the community in general." A careful study of his work lends conviction to this statement.

It seems that health, as well as efficiency, is favored by a protein ration or from one half to two thirds of the usual standards. Protein food is needed only for the construction of new tissue or for the repair of old. Energy is supplied by fats and carbohydrates, and by protein only when fats and carbohydrates are not supplied in sufficient amounts.

The diet for the healthy individual should vary, first, according to age. In infancy, when growth is rapid, protein ration must be relatively high, and the infant should be safeguarded against a diet too poor in those vital principles which are essential to growth and of which we are only beginning to get some knowledge. Inorganic materials, iron and others, are also essential to the proper nutrition of the infant, and this is often lost sight of in the milk dilutions which are so commonly employed.

During the growing period, possibly until the age of thirty, protein ration should be relatively higher than in later years; but after the age of thirty the amount of proteid should be diminished in the interest of the organism, and particularly of the organs of elimination. After the age of fifty, the diet should be still further reduced, with the purpose of sparing the organism the wear and tear of getting rid of a surplus, as well as the inconvenience and dangers of carrying extra weight. The habit, which is becoming more and more popular with the well-to-do, of eating irrationally during ten months of the year and then taking a so-called cure, an annual reduction of weight, should be mentioned only to be condemned.

The diet should also vary with the occupation; persons pursuing a sedentary life need a smaller amount of food, particularly fats and carbohydrates, than those who do hard physical work. Furthermore, the powers of digestion under sedentary habits are inferior, and necessitate more easily digested food. The proportion of heat-producing food should also be adapted to climatic and seasonal variations of temperature and humidity.

The diet during lactation should be arranged according to the following facts: A great caloric increase, proportional to the calories furnished in the breast milk. Meat and cream given to the mother raise the percentage of fat in the breast milk, while a carbohydrate diet lowers the percentage of fat. The percentage of proteid in the breast milk may be diminished by massage and passive or active exercises. It should also be borne in mind that the kind of fat taken by the mother influences the fat in the milk, and a change in the form of fat which the mother takes will often remedy digestive disturbances in the nursling (Lusk).

The following more or less isolated facts may be considered as established, and should be borne in mind and applied as often as practicable. The daily wear and tear of the organism destroys about one per cent. of the total nitrogen in the body (Lusk); this must be replaced or the organism suffers. Cooked meat contains from one fourth to one third of its weight in protein and protein contains about one sixth of its weight of nitrogen. Gelatin, though containing nearly the same percentage of nitrogen as protein, does not furnish that nitrogen in a form that can be used for building new tissue. It may, however, act as a nitrogen sparer, but it must be remembered that gelatin jelly contains only two per cent. of gelatin and, as this can save or spare only about one half its weight of tissue protein, its effect must be very slight. However, two thirds of the daily ration of protein may be given as gelatin (Murlin, by Lusk). On the other hand, it neutralizes hydrochloric acid in the stomach and stimulates gastric secretion; and, furthermore, it furnishes, by its cleavage, no tryptophan, tyrosin or cystin, and therefore its bacterial decomposition in the intestine can not yield indol, phenol, and certain other noxious by-products (Mendel). In certain diseases, such as typhoid fever, Graves' disease, leukemia, diabetes mellitus, cancer and others, an increase of metabolism, particularly of proteins, and the danger of nitrogen starvation, should be borne in mind. Gelatin is here useful.

Under all conditions of health and disease, sufficient water must be provided. The necessary amount varies with the individual and is influenced by his environment and occupation, but such an amount as will insure the excretion of approximately three pints of urine daily should be supplied, by mouth, by enteroclysis, by hypodermoclysis, or by intravenous infusion, as the exigencies of the case may demand.

Metabolism is diminished greatly during sleep, and also during mental and muscular relaxation; therefore, under conditions where it is desirable to conserve energy as much as possible, we must keep in mind the necessity of sleep, the importance of isolation and relaxation, and the harmfulness of unnecessary mental exertion as brought about by visitors, or physical wear and tear by habit of restlessness in bed. The patient should be impressed with the fact that there is a great difference between merely "staying in bed" and a properly conducted rest cure.

During hot weather, during rest cures for the purpose of increasing the body tissues, and during fevers, the specific, dynamic action of protein makes it desirable to depend as far as possible on carbohydrates and fats, giving only sufficient nitrogenous food to maintain the balance. The specific dynamic action of food stuffs is the effect of a stimulation of the cell metabolism by certain specific intermediary acids, developed during the breaking-down of the amino acids (Lusk).

Oysters, although easily digested, contain very little nourishment, one dozen oysters furnishing but one ounce of solid matter. Banana flour is easily digested, highly nutritious, and can be served in very palatable forms. Vinegar is often useful because of its power to soften muscle fiber and cellulose.

In the treatment of hyperchlorhydria, we should bear in mind that a reduction of the sodium chlorid in the diet tends to diminish the secretion of hydrochloric acid in the stomach, that cocoa in the dietary increases the acid-absorbing power of the food, while tea and coffee diminish the same (Hutchison). In the management of these cases of high acidity, I have found a pure carbohydrate diet, for the first week or two, after a short preliminary period of starvation, to work out excellently in many cases, contrary to the general usage,—milk and eggs being very gradually added during the second or third week.

Altogether too much reliance is placed in proprietary preparations of protein foods. The most popular beef preparations contain only about three per cent. of protein. The statements of the analyses are often misleading, as, for instance, Liebig's Extract of Beef contains thirty per cent. of protein, but, when the same is made into beef tea in the usual way, one pint of that beef tea contains but thirty grains of protein. Armour's Wine of Peptone and Fairchilds' Panopepton contain far more carbohydrate in the form of sugar than they do of protein—possibly ten to fifteen per cent. of the former and about three per cent. of the latter (Davis).

Malt liquors may be very useful in insomnia, in hypoacidity, and in diets designed for the increase of weight. Alcoholic liquors in proper dilutions exert a definite stimulating effect on the digestion of fats.

A sudden and radical change of diet may be resorted to and will favorably influence the intestinal flora. This implies, of course, that the diets in question are practically exclusive. Similar effects may be produced by the free use of any one of the various fermented milk foods.

The fact that certain families are predisposed to obesity does not obviate the dangers to the individual of carrying excessive weight. It merely imposes a somewhat harder task on those unfortunates. The principle depended upon in reducing diets is that, if the organism is not supplied with food from without, it will draw on its reserve stores of fats, carbohydrates and proteids. We do not usually wish to diminish the protein content of the body, and so we endeavor to supply only the necessary amount of protein in the food, with about two thirds of the body's energy requirements made up in fats and carbohydrates. "The other third of the necessary energy will be furnished by the body's own store of fat" (Lusk).

Cardiorenals, arteriosclerotics, and patients with chronic arthritis, chronic bronchitis and asthma, if considerably overweight, should be reduced if possible.

During the past few years, a revolution has taken place in our conception of protein metabolism, and we should all be proud of the fact that our own country has furnished its full quota of newly discovered facts on which our present knowledge is based.

To recapitulate briefly some of the salient facts brought out in the last International Medical Congress and in the last meeting of our national association, the digestion of proteids consists in their cleavage into their constituent amino acids, of which there are about eighteen. These amino acids pass through the intestinal mucosa into the blood stream, to be borne to the tissue cells, where they are stored or burned or used as building material for the construction of new, or the repair of old, tissue (Folin).

Urea, therefore, is not formed chiefly in the liver, but in the muscles, where most of the amino acids are broken down. This urea probably represents, for the most part, the discard of nitrogen from amino acids, which are to be used for fuel.

Since, therefore, all the tissues take part in the general protein metabolism, the products of that metabolism will not be greatly modified by any diseases limited to a particular part of the organism or to a particular organ (Folin).

Definite amino acids serve definite purposes, of growth or maintenance. If they are not supplied, the organism suffers. The evidence is strong that, in certain cases, specific amino acids act as vitamins or *Ergänzungstoffe* (complemental, but essential, food-stuffs).

Furthermore, the amino acids, when acted upon by intestinal bacteria, yield specific amins, opening a large field for the research worker. Tyramin, resulting from the putrefaction of tyrosin, is familiar to many of you as a pressor drug through the product of Burroughs, Wellcome and Company's laboratory.

Eustis, of New Orleans, has reported very satisfactory results in the management of cases with hypertension, by excluding as far as possible tyrosin from the dietary. He also claims that histamin, resulting from the putrefaction of histidin, is apparently a causative factor in many cases of bronchial asthma and urticaria, and that such cases may be benefited or cured by avoiding those protein foods which yield histidin. It is therefore plainly seen, as so beautifully pointed out by Mendel, that, from the dietetic standpoint, proteins must now be considered according to the specific amino acids which each yields on digestion. Furthermore, the same author has emphasized the fact that certain foods may be considered as acid and others as basic. The importance of providing the latter in abundance, in cases of threatened acidosis, should be borne constantly in mind. He mentions particularly potatoes, apples, raisins and canteloupe as strongly alkaline in their metabolism. On the other hand, meats, cereals, prunes, etc., are acid.

The relation of certain lipoids to hemolysis has interested investigators on both sides of the water, and may at any time give us a rational basis for the dietetic treatment of hemolytic anemias.

The highly scientific work of Reid Hunt, during the past few years, has furnished increasing evidence that certain foods have a definite effect in increasing or diminishing the resistance of the organism to certain poisons, also influencing the production of the various specific hormones, and internal secretions. Reid Hunt's work, considered together with the work on amins previously mentioned, gives added interest to the opinion of W. H. Thomson and others, that Graves' disease is an intestinal toxemia, best treated dietetically. The enigmatic effect of cod liver oil in diabetes (Thomson), and other conditions, may be similarly explained (vitamins); also the fact that migraine sometimes ceases to recur after cutting out a particular article of diet, such as eggs.

It is therefore seen that diet has ceased to be a simple question of proteins, fats, and carbohydrates, becoming a question of tryptophan, lysin, glycocoll, tyrosin, tyramin, histamin, cholesterol, licithin, and other products of intermediary metabolism.

In closing I wish to state my convictions that dietetics is the keystone of therapy and that in all medical curricula time should be allotted to dietetics in proportion to its importance.

DISCUSSION.

Dr. B. Franklin Stahl, Philadelphia: Dr. Litchfield has referred to the "old-fashioned dietetics" of twenty-five years ago. In my early days of practice there were no dietetics of any sort. I soon realized this when I read in the text books such explicit statements as "The patient should be carefully fed," or again the equally helpful direction, "The diet should be suited to the condition." The same vague dietetic helps are still in the textbooks. This indicates that the writers of books have not made their food therapeutics keep pace with their drug therapeutics. When you remember that drugs can influence vital processes only after they have been generated by suitable and sufficient food intake, you find a ready explanation for many of our therapeutic failures.

An interesting example of how this needed instruction was neglected is furnished by my experience when in 1897 I suggested to the dean of the medical school of the University of Pennsylvania the desirability of having instruction upon the selection and preparation of food for the sick. He said it was a very important matter, but that it was taught by the chair of therapeutics. I called upon Dr. Wood, who likewise admitted the importance of the subject, but said the professor of physiology taught it. In turn the professor of physiology said it fell to the teacher of hygiene. On further investigation I learned that no practical instruction upon the subject was being given by any of the eastern colleges. It was then that the University of Pennsylvania established this instruction.

Recent studies upon physiology and chemistry of digestion, assimilation, metabolism and elimination, together with correlated studies of foods, are giving brilliant results second to none in modern medicine. This is evidenced in the frequent and extended editorial notice being given this work in our leading medical journals. We are upon the threshold of a new practice of medicine which, as yet, has not gained its place in our textbooks.

We must learn to think over dietetics as carefully as we do over drug therapeutics. This thoughtless ordering of food is a sin, not only of the older practitioners but of the recent graduate as well. Is it not discouraging to hear a hospital intern say that he would add barley to mutton broth because that is the way they made it at home? The damage resulting from employing the methods of the kitchen laboratory instead of those of the physiologic laboratory is expressed in the thousands who have starved upon beef tea representing only the extractives of the meat, because the tea had been boiled for hours and the coagulated proteids removed by straining; or again the frightful mortality among the sick whose death certificates read typhoid fever when they should read unfit or insufficient milk.

We are apt to ignore the personal equation in our dietetic efforts. We do not keep in mind that certain individuals metabolize foods quite differently from others; that the end products of imperfectly metabolized foods may be more harmful than would be expected from the foods given.

Dr. Litchfield has spoken very optimistically of the facility with which we may adopt rational dietetics. He has referred to the latest analyses of digestion processes. This phase of the subject is of the utmost importance. This work will furnish the foundation of our practical dietetics. But there is another aspect of the subject which I want to emphasize because it is so constantly neglected. I refer to the insufficient attention given to the methods of preparing the various foods. In many instances it is not so much the question of what food is given a patient as how it is prepared. I am in the habit of telling my classes that I can prepare a fried oyster so that it will harm the patient less than much of the toasted bread given the sick; that milk can be given to any one needing it if the doctor knows how to make the taste acceptable and understands how to modify the casein and fat. The same may be said of the various essential food elements.

What we need in all our medical schools is instruction in the preparation of food as a part of dietetic teaching. Then will we have made progress in establishing values in dietetics.

Dr. DeWitt B. Nettleton, Sewickley: What Dr. Litchfield has said about the necessity for a scientific and rational basis for the study of the value of foods is true.

A blind following of unscientific and inaccurate diet table leads to nothing but unscientific and inexact feeding, which by the grace of a generous and potent physical organization may sometimes seem to be inspired by the deepest knowledge of food and of digestive processes, because good results will sometimes follow such inaccurate prescriptions.

The difficulties in the way of accurate, scientific feeding appear to be greater than they really are, I think. The percentage method of feeding babies presented some difficulties too, but they seemed smaller when one approached them more closely, and so will the difficulties in connection with the proper feeding of adults.

If we will first of all get our general classes fixed in our minds and remember that albumin is used for maintenance and growth, that the carbohydrates furnish the energy, and that cellulose or roughage keeps or tends to keep the intestinal tract swept out, and then follow some such plan as that just outlined of classifying foods according to what the usual portion contains of protein, carbohydrate, fat or husk, we shall find the question of what to prescribe a much easier matter.

Egg in macaroni is sometimes sufficient to continue eczema, and asthmatic conditions bear some relationship to diminished urine, urea, indicanuria, and a rise in ethereal sulphate.

Each of us can help to solve the question of feeding if we are willing to do the necessary work. The observation and study of the stools and of the urine will lead us ultimately to a correct estimate of the fate of food in the body when correlated with the facts which are set before us by the men mentioned by Dr. Litchfield in his paper.

The amount of protein is important as well as the kind, for we know that bacterial digestion of the albuminous molecule proceeds not only as far as enzyme digestion, but that it goes a step farther, and that it produces noxious substances which produce their characteristic effect on the organism. These are the aromatic substances and they are derived solely from the intestinal putrefaction of the proteins existing in the food and in the intestinal juices, and hence their increase augments with the increase of intestinal putrefaction.

Of course, it must always be remembered that putrefying nitrogenous matter anywhere in the body may give rise to these same bodies in the urine, and so a large ulcerating surface will cause their appearance just as a large mass of putrefying nitrogenous food in the intestine would.

The synthesis of the albuminous molecule by Fischer has been followed by the work of Lusk, Chittenden, DuBois and others to the end that, as Dr. Litchfield says, we can now think of protein metabolism in terms of amino acids, definite structures with definite purposes, producing definite results.

To my mind, the most interesting part of this paper deals with protein metabolism, and I should like to hear this subject dealt with in a special paper, or, to restrict the subject even more, have such a paper deal with the fate of the amino acids in the body, carrying the subject clear through, dealing not only with those amino acids which are taken up into the organism, but dealing also with those which are unused, and which suffer bacterial digestion resulting in the production of the oxyacids, phenol, skatol, and indol.

Such a paper would point the way to a closer control of the albuminous portion of the diet, because it would deal with the excretion of these bodies in the urine, and would show that the intestinal putrefaction of protein can be diagnosticated in the first place, and, in the second place, the disappearance of the condition can be maintained by a proper modification of the intestinal contents, guided by the knowledge gained from the quantity of aromatic bodies in the urine.

The matter of discovering how much protein we are to prescribe for our patients is probably not properly a part of this paper, and yet as a practical point it is most important.

It is well enough to say that the body needs so many calories, and that so much of this amount is to be made up of protein and that this protein is to be of a certain type in order that the body may maintain itself and in youth may add to its stature. But how are we to say to a patient that he is getting too much or too little of any amino acid, or of protein in general? For the answer to this question we must look to the feces and the urine, which contain the evidences of what has happened to the protein in the digestive tract.

We must examine the feces to see whether there is still protein which has not been utilized, and must examine the urine for the evidences of putrefaction, and it is this work in which we can all participate and by publishing our results can make available the facts from which will be deduced the true established value of dietetics.

Dr. R. N. Willson, Philadelphia: The subject of dietetics has been a very intimate one with me from a personal standpoint, because it has perforce been one of anxious study rather than enjoyment. I want to emphasize in this connection a point to which Dr. Stahl referred, namely, that dietetics is not a question of rule of thumb. In other words it is almost impossible for the practitioner actually to practice any hidebound rule of dietetics. It is rather a matter of individualized study of each patient. Dr. Stahl told us that he could prepare a fried oyster so that you and I could eat it with as little harm as would be had from ordinary toast. Yet the fried oyster prepared as he fashions it would, I imagine, put individual me to bed. In my work I have found certain persons who are promptly poisoned by shell food and are in such a condition after eating it that they are fit for nothing. I am recovering at the present moment from an acute systemic poisoning, following a periodic indulgence in oysters. They always poison me; also certain other foods which others can eat with impunity. This poisoning is not local, but systemic. There is no indigestion. The picture is often that of an influenzal attack.

It was a matter of interest to me at Atlantic City to hear a series of dietetic laws laid down by a man like Mendel in which he proposes to say that we (meaning all) will get basic products from the ingestion and digestion of certain food stuffs, and acid products from others. Among the basic foodstuffs he classed several fruits, such as raisins and canteloupes, which I have found by personal experience give clinical results in certain of my patients, as well as in me, similar to the orange and the lemon, and the grapefruit. In the laboratory they may form basal products. In my body they cause an intense acid toxemia. We can not, therefore, follow any cut and dried rule for dietetics, but must form our procedure according to the individual patient.

There are also varying conditions of the individual body in which the ordinary food products can not be assimilated so as to form beneficial nutriment, whereas at other times and under other conditions the same individuals can make use of the same foodstuffs and form out of them proper nutriment. I have had an interesting personal experience in this direction also. Up to a few months ago there were certain foods which I was unable to touch, because of conditions resulting, as Dr. Billings has so well emphasized, from a localized or focal infection. I had a mass of adenoids as large as my thumb removed from my pharynx. Shortly thereafter,I found that I could use certain foods (not all) which before I could not. There was no difference in my individual makeup except that I was no longer absorbing toxins from a localized focus of infection. It is also true of chloroanemics that when we supply their blood with iron their intestinal juices begin to break up foods which before poisoned them. Now these individuals assimilate substances which were harmful previously. I want again to emphasize the point that I make no reference to indigestion as the term is constantly used. I refer to acute systemic poisonings resulting in aches and pains, in joint swellings, in coryza and bronchitis, in skin eruptions, and in embarrassment of the vision. Students should be taught that no fixed rule for dietetics can be carried out. As we continue generation after generation indulging in an excess of food, and under the influence of alcohol, tobacco, and overwork and overworry, it becomes more and more likely that our progeny will lessen its ability to follow a stereotyped dietetic rule. It is true that dietetic study and research open a useful field. But that dietetics as such is likely to do more than suggest general lines and methods of procedure, I very much doubt. I only wish it were more of a practical than a pleasing dream.

DR. LITCHFIELD, closing: Dr. Wilson has confused the effect of gastric irritation with the end products of metabolism. The acid that he refers to may be either hydrochloric acid of gastric origin, or organic acid from fermentation. An article may be digested with great difficulty and pain, and yet after digestion and absorption may yield a full quota of normal products of metabolism. The question of acid and basic foods has been very ably treated in an article by Dr. Blatherwick which is to appear in an early number of the *Archives of Internal Medicine.*

Quantitative feeding has been greatly hampered by the purely mechanical difficulties of weighing or estimating the food taken. We have only recently been furnished with a dietary scale, which does away with all these difficulties. This scale has a movable dial, which can be set back to zero before and after each addition to the plate. I will pass it around for your inspection, and highly recommend it to all who are doing any quantitative feeding. Used in conjunction with the tables given in Locke's little book on food values—(D. Appleton and Company) it greatly simplifies this important problem.

INTESTINAL STASIS IN ITS RELATION TO GASTRIC AND DUODENAL ULCER.

BY ERNEST LAPLACE, M.D.,
Philadelphia.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

In his studies on fermentation and putrefaction Pasteur, forty-eight years ago, discovered that microörganisms increased or lessened their virulence under certain atmospheric conditions, nutritive media, length of culture. All vaccinations are based on this phenomenon. Lister realized this phenomenon to be applicable likewise to wound infections which in pre-antiseptic days were largely putrefactive in character. He found that putrid fluids retained in a wound soon became so virulent as to produce the once deadly hospital gangrene, and that thorough drainage was an essential preliminary in order that a wound should respond to antiseptic treatment. Later, Wright demonstrated that this altered virulence depended upon the chemical changes in the culture media of body fluids from bacterial growth by which new, highly complex proteid substances were formed, some of which are of extremely irritating or toxic character. These are generally known as toxins, which, when rapidly or gradually formed in the human body, are the direct causes of so many pathologic processes. Hence the principle of retention or stasis is no new element in the causation of disease. Its application, however, to the necessary chemical changes which perpetually occur in the digestive tract, has only recently received serious attention, as a causative element in gastrointestinal diseases. The question was first opened by Metchnikoff who declared that imperfect drainage of the colon resulted in continued stasis or fecal retention, which in turn allowed the bacterial flora of the colon to increase in virulence, producing toxins whose constant absorption was responsible for the disseminated fibrosis of organs and tissues characteristic of premature old age. He proposed the antagonizing action of the Bulgarian bacillus and intended thereby to destroy the putrefactive results of colonic stasis, not suspecting that intestinal stasis or incomplete obstruction could exist elsewhere in the intestinal tract. To Sir Arbuthnot Lane is due the credit of demonstrating that adhesions, bands and ptoses could so interrupt the course of ileac peristalsis as to produce retention or stasis in various parts of its course, dilating the ileum, diminishing its resisting power to irritation and allowing the formation of toxins more deadly than those formed in the colon.

To intestinal stasis and the detrimental results of the absorption of the accompanying toxins, Lane attributes gastric and duodenal ulcers among many other pathological conditions, which it would be entirely foreign to this paper even to mention here.

It is important to confirm this assumption experimentally. Stone, Bernheim and Whipple have isolated a loop of duodenum in dogs by high ligature and reëstablished the continuity of the gut. All disturbances from intestinal juices and food derivative were eliminated. The result is fatal. A highly toxic fluid gathers within the closed loop which when injected to other dogs produces death through symptoms like those of the dogs with closed loops. The toxins exist both in the cells of the mucosa and in the free fluid within the loop. When the closed loops are drained externally, the toxic nature of the fluid is lessened, the absorption is then mainly from the cells of the mucosa.

Eppinger and Guttman, from their experiments, are convinced that substances after intestinal stasis may be sent out from the intestines to act in the capacity of hormones. Histamin, putrescin, cadaverin and tyramin may have a hormone function. From another base extracted, one drop of a 1-1000 solution on a superficial needle scratch produced typical urticaria in less than five minutes. In other words, a pure intestinal obstruction results in poison formation of an irritating nature which tends to be formed and eliminated in the upper intestinal tract. This only confirms the clinical signs characteristic of intestinal obstruction, the nausea, hematemesis which precede the fecal vomiting of reverse peristalsis and accounts for the great relief following gastric intestinal lavage. Again duodenal ulcer accompanies general infections from burns of slow healing. Intestinal ulcers accompany typhoid infections, again demonstrating the toxin eliminating function of the intestinal mucosa. This accumulation of clinical and experimental evidence lends more and more weight to Lane's hypothesis, that intestinal stasis, through the formation of toxins above the obstruction, and its elimination by the mucous membrane of the stomach and duodenum, offers at least a plausible explanation of the predisposing cause to gastric and duodenal ulcer. Chronic intestinal stasis does not necessarily mean constipation as usually understood. It may be a condition of infrequent defecation, but may be accompanied by one or more daily stools and even diarrhea. This is easily understood when we remember the irritating nature of the retention fluids of the intestine behind the kink or obstruction. The fluids are finally allowed to escape and the rest of the intestinal tract is irritated by it, resulting in a diarrhea of foul character.

The use of mineral oils, has proved the most efficient nonsurgical means of drainage when intestinal stasis exists. Its combination with the *Bacillus bulgaricus* would add a most acceptable intestinal antiseptic to the draining efficiency of the mineral oil, and thereby reduce to a minimum the evil effects of the intestinal anatomical and physiological derangement which permits stasis to occur.

But what of the cases where the stasis is no longer the main therapeutic indication, and the patient now presents one of the end results of chronic intestinal stasis, that is the clinical well-organized and accepted signs of gastric and duodenal ulcer? The internist invariably gets these patients in the incipient stage, where dyspepsia seems at first to be a diagnosis suited to all cases. Should gastro-intestinal rest and diet not improve these cases within a reasonable time, in the hands of the internist, then these principles must be mechanically enforced, with precise discrimination by the surgeon.

Under the information of *x*-rays, he will learn where the kinks and ptoses have caused intestinal stasis; this must be corrected so as to remove the primary cause. Lane goes very far already in asserting that since drainage is what the ileum lacks, we should give it this drainage through ileosigmoidostomy or colectomy. This phase is still subjudice and it is not my purpose to discuss it here. Granted a diagnosis of gastric ulcer, let us see which operative procedure is best suited to meet the indication. A gastric ulcer must be demonstrable at operation. If it is not, the chances are that the clinical signs were due to disease elsewhere; namely, the appendix or gall-bladder regions, localities which should be explored so that gastroenterostomy under these circumstances be not fruitless, for Sir B. Moynihan has declared with some sarcasm that "the greater number of gastric ulcers were situated in the lower right quadrant of the abdomen,"—that is, were mistaken cases of appendicitis.

It is accepted that in twenty per cent. of gastric-ulcer cases, the ulcer is single; in eighty per cent. of the cases the ulcer is multiple. In a large proportion of cases also the ulcer has so bound the stomach down by adhesions to the neighboring structures that mobility of the stomach is abolished. In these cases it is not possible to resect the ulcer-bearing area, which is the most direct and radical surgical treatment. This therefore will only be practicable in about twenty per cent. of the cases. Most cases therefore will demand palliative surgical interference, directed to applying the principle of rest to the ulcerative area of stomach or duodenum.

Ulcers of the stomach may (1) occupy the pyloric region or pylorus. Ulcers may (2) exist everywhere else in the stomach including the cardiac region. Gastroenterostomy is indicated for the first class. The contraction of the pylorus, under the irritation of the neighboring ulcer, forces the food to pass through the new anastomotic opening, and ensures thereby physiological gastric rest which is the purpose of the operation. When, however, the ulcer is at a distance from the pyloric region, a gastroenterostomy is of practically no use. The stomach, finding a patulous pylorus, will continue the process of digestion as before the operation, close the gastroenterostomy, and empty itself through the pylorus as heretofore while the food remains in the ulcerated area. Hence it has been the custom to obliterate the pylorus by various ligature and section methods to force the stomach contents through the anastomosis. This is based upon animal experiments of Delbet, Maury and Kelling. Sometimes digestion is longer after a gastroenterostomy in which no obliteration of the pylorus has been made. Soupault and Katzenstein maintain that a part of the improvement of an efficient gastroenterostomy is due to a reflux of bile and pancreatic juice into the stomach through the anastomosis, thereby lessening the usual hyperacidity of the stomach. A better and more direct method of treating duodenal ulcers and ulcers at a distance from the pylorus is by jejunostomy especially when a gastroenterostomy has failed. This should be performed by the Eiselsberg-Witzel method. It has the merit of being an exceedingly simple operation that can be performed by local anesthesia if necessary. This is the operation which I now perform when the stomach does not admit of a safe gastroenterostomy or the low condition of the patient demands as short a surgical intervention as possible. Early intervention is the surest condition for permanent relief. If melena and low blood pressure and emaciation have for a prolonged period been added to the list of symptoms then the patient in twenty per cent. of the cases has already become a victim of tuberculosis which will ultimately be the immediate cause of death. But it will be objected, and rightly so, that all these surgical procedures attack the end results and try to remove them, but do not affect the causative element; that is, perfect drainage of the ileum and colon.

Lane proposes ileosigmoidostomy and colectomy, which at best is a confession of failure to prevent the initial and continued putrefactive intestinal processes. This must be done by hygiene and eugenics so that a strong and resistant body should start in the race of life. Prophylaxis in person to avoid the loss of body resistance, oral hygiene, moderation in food, outdoor activity, will maintain the resistance against lowered nutrition, which likewise weakens the opsonic index, and allows microörganisms to develop, which first weaken and poison our fibrous tissue elements which suspend the intestines. Kinks and loops result and the vicious circle is established. The simple life and back to nature seems to be once more the verdict of modern medicine as in the days of Hippocrates. Shall we then say that medicine has these many centuries but moved in a circle? We would rather say, with Sir James Paget, that it forever moves, not in a circle, but in the windings of an ever ascending spiral.

DISCUSSION.

Dr. L. J. Hammond, Philadelphia: As it concerns intestinal stasis, especially from the standpoint of etiology, the author has clearly impressed me with this certainty; that it must be considered from the anatomic, embryologic, physiologic, bacteriologic, as well as from the pathologic, viewpoints, the latter having consumed the greater part of our thought in the past.

To have a clear understanding of the causes of intestinal stasis, we need only refer to the findings in the abdominal cavity of those patients coming to operation because of unbearable symptoms of clearly defined alimentary derangement. Not uncommonly, these symptoms come into existence with the birth and continue in some instances throughout long life, always rebellious to conservative treatment, yet never presenting symptoms suggestive of acute inflammatory characteristics. Operation in such a person often reveals classic evidence of vices both in shape and position of parts of the alimentary apparatus unmistakably due to defects in the embryologic development of the tissues. As an example, I would refer to the hypertrophied pylorus, angulation of the duodenum, diverticulums in the region of the cecum and sigmoid. Again, the pathologic processes, such as inflammatory bands and adhesions, kinks, and flexures, also frequently encountered in the abdomen, makes it difficult to understand why intestinal stasis and its consequences are not even more frequently met with, for no impairment of the fecal current can exist and be maintained for any length of time without both impairing the health of the victim and adding a decided factor in the development of such complications as ulcer of the stomach and duodenum which we have just had so conspicuously brought out for us by Dr. Laplace.

Experiments recently made by injecting a solution of dermatol into the veins of the mesoappendix, producing a thrombus in the gastric veins and resulting in a round ulcer, are impressive, and we would expect that a septic condition of the intestines impairing its physiologic function would be equally or even more likely to result so disastrously.

As to the particular treatment to be employed, I am quite in accord with the author that that operative procedure which promises the nearest approach to putting the parts at rest should be the one of election.

SERO-ENZYMES IN PREGNANCY AND DISEASE.

BY JOHN A. KOLMER, M.D., DR.P.H.,
Philadelphia.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

PRINCIPLES.

It is largely to the researches of Abderhalden and his associates that we owe our knowledge of the fact that when foodstuffs are introduced into the body parenterally, *i. e.*, by subcutaneous or intravenous injection, ferments are produced that, by process of cleavage and reduction, deprive them of their individuality. For example, normal dog serum can not reduce cane sugar, whereas the serum of a dog immunized by several injections of this sugar is able to reduce it *in vitro*. Similarly, normal serum is unable to cleave edestin (vegetable albumin), whereas the serum of an immunized dog will split this protein into simpler substances.

After he had proved experimentally that the animal organism is able to defend itself against foreign substances by mobilization of ferments, Abderhalden next took up the question whether protective ferments are produced when substances native to the body but foreign to the blood are introduced into the circulation. Having learned from the researches of Veit, Schmorl, Weichard, and others that during pregnancy syncytial cells frequently enter the maternal circulation, Abderhalden used the serums of pregnant animals and found that they contained a ferment capable of splitting placental peptone into amino acids, and coagulated placenta into peptones, polypeptids, and amino acids.

It was thus established that the body cells are harmonically attuned to one another, and if new or modified cells or their products are brought into relation with other cells, they are received as foreign invaders, and their entrance is followed by the production of protective ferments (*Abwehrfermente*) capable of bringing about their cleavage into simpler products. In this manner the presence in the circulation of some of the body cells may give rise to the production of these ferments if the cells in question are really foreign to the blood plasma and other cells.

Abderhalden is careful to note that although he was led to make these investigations on the supposition that syncytial elements were present in the blood of pregnant women, it is not necessary that they be constantly in the blood, for every case of pregnancy has a complicated protein metabolism and there is a general exchange of substances between the placenta and the maternal blood that permits the entrance into the latter of protein products that have not been broken down completely into amino acids, and that cause the organism to produce defensive proteolytic ferments.

In cancer, where the production of new cells is so marked, some of these cells or their products may easily be swept into the general circulation, where they act as foreign invaders and cause the formation of protective proteolytic ferments. It is noteworthy fact, moreover, that the serum of carcinoma cases reacts best with carcinoma cells, and that of sarcoma with sarcoma cells.

Similar ferments have been described in other conditions. Fauser has demonstrated that the blood serum of dementia præcox patients contains ferments that act on the reproduction glands, so that the serum of males reacts with testicular extracts and that of females with ovarian extracts. These serums were, however, also found to react with thyroid tissue and brain cortex. In general paresis reactions were obtained with brain cortex and liver, also at times with thyroid gland, reproductive glands and more rarely with kidney.

Abderhalden has found ferments for the tubercle bacillus in the blood serum of tuberculous patients, and they have also found in the blood serum of syphilitics for the *Treponema pallidum,* either in pure culture or in organs containing large numbers of the parasites.

Although these protective ferments are in general similar to the cytolysins or antibodies produced during bacterial and protozoan infections capable of lysing or digesting their antigens, their exact nature and relation to the cytolysins have not been determined. From the evidence at hand it would appear that the ferment-like cytolysin is specifically directed against the toxic portion of a bacterial cell, and the proteolytic ferment against the bacterial cell itself. Recent work by Pearce and Williams would seem to indicate that the cytolysins and protective ferments are separate substances, but considerable additional experimental investigation is required to clear up the point.

Although recent investigations would tend to show that these proteolytic ferments are not so specific as Abderhalden believes, the subject is one of greatest importance and its elucidation may possibly throw much light upon the nature of immune bodies in general. All investigators are in accord regarding the presence of a proteolytic ferment in the blood serum of pregnancy, but whether this ferment is specific or of a general character is the point under debate. To all criticisms Abderhalden has usually replied by calling attention to errors in technic, and, indeed, while the dialysis method is easy of manipulation, opportunities for technical error are so numerous that the test is far from simple.

METHODS.

Two methods have been devised by Abderhalden for the demonstration of the protective ferments in the blood-serum of pregnancy:—

1. *The Dialyzation Method.* Specially prepared and coagulated placenta and fresh serum are placed in a dialyzing capsule so prepared

that it will permit the passage of peptones and amino acids only. The filled capsule is placed in sterile distilled water and incubated for from sixteen to twenty-four hours, when the dialysate is tested by the biruet or ninhydrin test for peptones and amino acids. Under proper conditions the presence of these substances indicates that the placental tissue has been digested by a ferment in the serum, and, if this ferment is specific for placental cells, this indicates that the serum tested is from a pregnant woman. This is the method usually employed.

2. *The Optical Method.* This method is based upon the same principle as the dialyzation method. Into the tube of a polariscope place a solution of placental peptone and the serum to be tested. Warm the mixture to 37° C., and after an hour note the degree of rotation and record it; repeat this at intervals during the following twenty-four to forty-eight hours. If the serum contains a proteolytic ferment, the peptone is split into amino acids and the degree of rotation increased from 0.05 to 0.5 and higher. This method requires an expensive polariscope, considerable practice in making the observations and readings, and is only reliable in skillful hands.

Practical Value of Abderhalden's Pregnancy Test. 1. It is too soon to express a definite opinion of the specificity and diagnostic value of this reaction. Most reports have been based upon the dialyzation method. -According to Abderhalden, Veit, Frank and Hermann, Franz and Jarisch, Petri, Judd, Schwartz and others the ferment is highly specific, and the test is of considerable value in the diagnosis of pregnancy.

2. The reaction appears in the middle of the second month, and disappears in from ten to fifteen days after pregnancy has been interrupted, regardless of whether the fetus is born before, at, or after the normal period of gestation. Nursing has no effect upon the reaction.

3. The reaction has been recommended in making an early diagnosis of pregnancy, when the symptoms and physical signs are indefinite; also in making a differential diagnosis between pregnancy and tumors of the pelvis.

4. The reaction is likely to be positive in hydatidiform disease and in chorio-epithelioma.

5. In acute febrile and cachectic diseases the serum may contain relatively large amounts of dialyzable compounds; positive reactions have occurred in tuberculosis of the female generative organs.

6. All investigators in this field are in general accord regarding the constant presence of the reaction in the serums of pregnancy, but there is a growing tendency to regard the ferment as nonspecific and capable of splitting the coagulated protein of other organs, and, indeed, of organs from the lower animals. I have come to regard a negative reaction of more value in excluding pregnancy than a positive reaction in establishing the diagnosis of this condition.

Abderhalden and his associates and numerous other investigators have reported that enzymes may be found in the blood serum of persons suffering with cancer. On this basis the test, conducted in the same manner as the pregnancy test except that coagulated cancer tissue is used as the substrate, has been advocated in the diagnosis of malignant disease.

Mention has already been made of the investigations of Fauser with the serums of persons suffering with dementia præcox and other mental diseases with various antigens composed of the ductless glands, testicles, ovaries, etc. These studies would tend to show that lesions of these organs may be operative in the symptomatology of these conditions and may open up a wider application for treatment with organ extracts.

The test has also been applied in the diagnosis of syphilis, tuberculosis and other infections, but sufficient work has not yet been done to warrant an opinion of its value in these conditions.

DISCUSSION.

J. Bronfenbrenner, Ph.D., Pittsburgh: I take the opportunity of the discussion of Dr. Kolmer's paper to state briefly some of the findings obtained by me in collaboration with Mitchell and Schlesinger in our study of the Abderhalden test. It would be very difficult to improve on the able summary of Abderhalden's discovery given by Dr. Kolmer, and as the time allowed to me is very short I shall only give additional emphasis to one point of Abderhalden's theory.

According to Ehrlich's theory the parenteral introduction of foreign protein causes the cells of the body to produce an excess of specific receptors which at a certain period of the process are found circulating free in the blood and are known to the students of immunity under the name of amboceptors, antibodies or "substances sensibilisatrices." These specific antibodies are of a complex nature, and although they are directly responsible for the specificity of the protective processes in the body, they by themselves do not present any active principle, and it is to the complement that Ehrlich and his school attribute the property to act upon the antigen. The properties of these antibodies resemble those of enzymes only in very few respects while they differ from them in many points. According to Abderhalden, however, the parenteral introduction of foreign protein results in the production of specific enzymes capable of directly digesting the antigen *in vitro*. I disagree with Dr. Kolmer in that he thinks that Abderhalden has proven the enzyme nature of these substances. On the one hand it is hardly possible to believe that the organism should be able to supply so many specific enzymes, and on the other, it is hardly possible that the enzymes circulating in the blood should be strong enough to digest coagulated protein as is the case in the Abderhalden test.

In our own experiments we tried to produce a specific enzyme by repeated inoculation of rabbits with egg-white and although the serum obtained from them proved to contain a very large amount of antibodies, a Metz tube containing coagulated egg-white did not show even the slightest traces of digestion of egg-white when placed in such serum. This and some other experiments led us to conclude that either the enzymes on which the supposed digestion of placenta depends are essentially different from the substances obtained by immunization of rabbits or that they are both alike, but not of an enzyme nature. Further experiments along these lines convince us that the latter alternative is the correct one. We succeeded not only in corroborating the earlier findings of Stephan and Hauptmann that the complement is playing an important part in the Abderhalden test, but that the specific so-called enzymes of Abderhalden behave in every way similar to any antibody as used in the terminology of immunity. For we succeeded on the one hand in exhausting the serum of pregnant individuals of its specific elements, and on the other hand in actually sensitizing the placenta protein so as to give a positive ninhydrin test upon the addition of any fresh human or animal, male or female serum. Having thus convinced ourselves that the Abderhalden test did not depend on any enzyme specifically able to digest the placenta protein—since the addition of any serum could give rise to positive ninhydrin test, provided it was added to the previously sensitized placenta—we thought that the ninhydrin test was nothing else but a new expression of the phenomenon which previously used to be brought to light by the indicator of Bordet-Gengou; *viz.*, hemolysis. Viewed in this light the Abderhalden test, without offering anything new as to the theory or mechanism of immunity, brings however a very effective new indicator by means of which we can judge of the occurrence of the reaction.

As to the mechanism of the test proper, I wish to state without going into the details of our experiments, that I have the proof of the fact that in the Abderhalden test placenta is not digested, that the amino acids and polypeptids, which dialyze through the wall of the thimble, come from the serum. I have been able to follow their appearance in the serum after such a serum has been incubated with placenta protein for some time and under certain conditions. These dialyzable substances appear as a result of the digestion of the globulin fraction of the serum by the proteolytic ferment of the same serum, in other words, as the result of the autodigestion of the patient's serum. This proteolytic ferment responsible for the autodigestion is not specific, being present in all fresh sera, *in vivo* as well as *in vitro*. The action of this ferment while in the body, is arrested by the antitryptic action of some serum constituents, amongst which are nonsaturated fatty acids as shown by Jobling. The combination of any specific antibody (which is not of a ferment nature) with its antigen, *in vitro* is also capable of removing the antitryptic inhibiting principle in the serum, setting free its proteolytic ferments which in turn digest the globulin fraction of the serum and set free dialyzable substances. Incidentally I wish to call attention to the fact that this autodigestion of serum is the very mechanism of the complement deviation or complement fixation phenomenon, as in each case where complement is fixed there appears dialyzable proteins which give positive ninhydrin reaction and v. v. Wherever the Abderhalden test is positive, it can be proved that the complement has been inactivated. The autodigestion of serum produced by the removal of antitrypsin in Jobling's experiments can be stopped by returning the fatty acids to the serum. The autodigestion of the serum in the Abderhalden test (which is due to the removal of the antitryptic inhibition from the serum of the patient by the combination of the antibody it contains with placenta antigen) can also be stopped by the addition of nonsaturated fatty acids. According to my experiments, moreover, the self-digestion of the serum results in a production of a toxic substance which is in all probability identical with Friedberger's anaphylatoxin, and when occurring *in vivo*, is probably the cause of the eclampsia. The time is too limited to stop to relate details of the experiments, but I am inclined to think that here we have the clue to possible prevention of this much dreaded occasional companion of childbirth. In short the Abderhalden reaction is really specific but not in the sense of Abderhalden, that it depend on the presence of specific enzymes, but in the sense that the specific antibody present in the blood of pregnant women only combines with the placenta antigen and thus sets free the only proteolytic enzyme which is always present in the serum of any animal. When considered from this point of view the Abderhalden test should be positive wherever the complement deviation test would have given positive results. And, in fact I obtained in many instances a positive reaction with the sera of syphilitics using a pure lipoid as antigen, in which the only source of protein cleavage was the serum of the patient. This again proves that not the substratum but the serum itself is digested in the Abderhalden test.

THE WORK OF THE BUREAU OF MEDICAL EDUCATION AND LICENSURE IN RELATION TO STATE MEDICINE.

BY J. MONTGOMERY BALDY, M.D.,
Philadelphia.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

During the session of the Legislature of Pennsylvania in 1909 the medical profession made its most determined effort to pass a one board medical bill. This effort failed ignominiously. The legislative committee of your state society, after due consideration, decided to make one more effort to bring about this legislation. The result of the efforts of your committee during the session of 1911 is now history, and a one board medical bill is incorporated in the Acts of Assembly of the State of Pennsylvania. Two years of administration under this legislation convinced the Bureau of Medical Education and Licensure that certain faults and weaknesses existed in the Act of 1911, and that it should be amended. During the session of 1913, carefully considered amendments were proposed and enacted, thus correcting many of the faults of the original act. The Bureau of Medical Education and Licensure, created under the provisions of this legislation, has, therefore, had the administration of medical matters in the State of Pennsylvania in hand for a period of a little over three years. During this time no official report has been made either to the medical profession nor to the state at large as to the working of this bureau. It seems, therefore, fitting at this time that both the medical profession and the people of the state should have some reliable insight into the necessities of such a law, what it is the aim of the bureau to accomplish, the means it has adopted to bring about this end, and what has been actually accomplished by its administration.

As a matter of history, it is well known that there were three boards of medical examiners in the State of Pennsylvania up to 1911: the board, under the authority of the old school physicians, with power to pass on the qualifications of any graduates in medicine applying to them; the board under the control of the homeopathic physicians, with similar powers; and the board under the control of the eclectic physicians, with similar powers. It will be recalled that it made no difference from what school an applicant graduated, nor how often he had failed any one or two of the boards, he had the option of again applying to any one of the three boards he saw fit. Although the medical act authorizing the control of medicine by this plan was intended to keep incompetently educated physicians out of the State of Pennsylvania, as a matter of working the sum total of results accomplished was that at no time during the administration of this law was any man, however incompetent, known to fail eventually to be admitted by one or the other of these boards. In other words, the medical law of Pennsylvania was a farce, and only existed in order to deceive the public, who relied upon the state to indicate to them by its license that the man holding that license was a competently educated man in medical matters. Pennsylvania being amongst the last of the states to abolish this system of state control, was consequently flooded with incompetents, and with men who were rejected by other states. Hence, the necessity for the Act of 1911.

At the time the Bureau of Medical Education and Licensure took charge of the administration of the present medical act, medical matters in Pennsylvania were so chaotic as to be a reproach to the state. The medical schools were at variance with the medical counsel and medical boards. The schools were suspicious of each other. Medical men throughout the state were partisans of one or the other. Medical education in the schools was of unequal quality, and although the equipments of the various institutions had fundamentally a solid foundation, they were not being developed to the highest ideals, and Pennsylvania was beginning to suffer materially in the eyes of the medical world as indicated by the low classification of our schools by national medical authorities.

Preliminary requirements for entrance into medical study were at a minimum and poorly administered, the medical course itself was insufficient and incompetent to measure up to the higher ideals and ambitions of American medicine. At the start, a glance over the field was not encouraging, and the results capable of being accomplished seemed dubious, or at best to be long delayed.

The Bureau of Medical Education and Licensure started out with the single idea of making the medical situation in Pennsylvania the best and most comprehensive in the country. In order to accomplish this, it early recognized the fact that the first reforms would have to be of our own house, and that to accomplish the object, it would be necessary to have the cooperation of the medical profession and medical schools. The medical schools of the state, without exception, arose to the occasion and grasped the opportunity under the lead of the bureau. It was a case of pull together and pull hard. Animosities were all buried and forgotten. Everybody kept the object in view, and constantly worked toward the final goal. The gross result of all these efforts has been to accomplish the following results: The preliminary requirements before an applicant can enter a medical school of the state have been raised as a state standard compulsory on every school in the state, from graduation in a four-year high school course to an additional year of credits in physics, chemistry and biology, of college grade, all of which must be acquired prior to entering upon medical studies. Thus, the possibility of nullifying the entrance requirements by allowing a student to begin his medical course with conditions is entirely abolished. During the same session in 1911, a bill was enacted creating the Bureau of Professional Education. It is the duty of the administrators of this bill to pass upon all the preliminary requirements of every student entering a state college, thus taking out of the hands of the school itself the possibility of prejudiced judgment in regard to these credentials, and securing a common and competent judgment of these credentials for all alike. The medical course itself has been strengthened in many of its departments, and requirements of practical work, such as administration of anesthetics, assistance at operations, attendance on post mortems, and attendance of obstetrical cases have been recommended by the bureau to the schools and have willingly been adopted by all of them. After the completion of a four-year course at the school itself, the graduate of medicine must now spend twelve months in an approved hospital as intern. This gives him a full year of experience at the practice of the profession he has been heretofore studying, under the care and leadership of competent practitioners of medicine and surgery, before he can enter the state examination to earn his license to practice medicine and surgery. Pennsylvania is the first state in the Union to have adopted this intern year requirement, and since her action in the matter, medical authorities throughout the whole country are moving rapidly in the same direction under the influence of the leadership of this state.

The bureau early appreciated the importance of reciprocity. It is a matter of common knowledge that "states' rights" in this country has stood in the way of a national law for the issuing of licenses to applicants who are able to show competency to practice medicine and surgery. This is a condition, and not a theory, and one which medical authorities the country over have been trying to solve. The bureau early appreciated the fact that the license should go with the flag, and that when a man has once shown his competency and has received his license, that this license should carry the right to practice in any state in the Union. It is a great injustice to such a man that he should be enforced to undergo a technical examination each and every time the exigencies of life forced him to remove from one community to another. Only too often does this necessity arise from ill health or family relations, perfectly legitimate reasons and a sufficient burden in itself to a man without adding the further burden of preparation for a technical examination. In 1911, Pennsylvania did not reciprocate with a single state in the Union. What few states she had formerly reciprocated with had canceled their agreements because of our low standards. To-day there are twenty-eight states[1] which will accept in reciprocity the licensing certificate of Pennsylvania provided the applicant has graduated from a school in good standing.

All reciprocity agreements entered into by the Bureau of Medical Education and Licensure in behalf of the state are based on two points; namely, that the applicant has graduated from a school recognized by the bureau, and that he in addition has passed the state examination of the state from which he applies. In consequence of this, there are a considerable number of medical practitioners in the country who are unable to enter Pennsylvania without taking the regular examination, for the reason that the schools from which they have graduated are now extinct, or that they received their license to practice medicine before state licensing boards came into existence. These men have had years of experience, are mostly fairly competent practitioners of medicine, are older men and will probably not remain in practice much longer. These are the very men to whom an examination including modern laboratory methods would be a great hardship, and the majority of whom would be excluded from the benefits of our reciprocity agreements.

The bureau has thought it wise to open the doors of Pennsylvania to these men provided they could show a fair knowledge of the practice of medicine, and has, therefore, instituted an examination at the bedside, an examination at which is excluded laboratory and technical methods, and which is confined largely to practical everyday practice of medicine. To this examination may be admitted at the discretion of the bureau any applicant who can show that he has graduated from a school that is now extinct, that he was licensed to practice medicine before the days when state licensing boards came into existence, or any other physician who can show that he has practiced medicine for ten consecutive years prior to January 1, 1913. The bureau believes that in this manner it has largely overcome the disadvantages under which the older men in the profession have labored in the matter of reciprocity.

The sum total of results obtained has been to transfer Pennsylvania from one of the lowest grade positions, medically, in the country, to the very leadership of the nation, and she has at last attained the position which is her just due in view of her past brilliant medical position.

The raising of the standard of state medicine has resulted in cutting down the classes in the medical schools at least thirty per cent. Partly in consequence of this prohibition to the incompetent to even begin the study of medicine, there has arisen throughout the whole country an enormous swelling of the ranks of the various cults and branches of medicine. Men and women who are utterly incompetent mentally to undertake the strenuous studies necessary to any profession have sought every possible back door by which they might evade the proper preparation for their work and by which they could practically practice medicine under this evasion.

This bureau early foresaw that if the people of this state were in future to be given proper medical attendance, it would be useless to insist on the schools turning out competently educated medical men unless these back doors were closed and that every person desiring to practice medicine or any branch thereof, was forced to acquire a competent education for whatever therapy he might pretend to practice. It is perfectly evident to any intelligent mind that the prime necessity for the relief of any human ailment is the ability to determine what that ailment is. It is utterly impossible for anyone to treat the sick by any method of therapy with any justice to the sick themselves, or with any hope of results unless they know what is the matter with the patient.

The medical act of Pennsylvania contains the following words: "It shall not be lawful for any person in the state of Pennsylvania to diagnose diseases . . . . or to hold himself or herself forth as able to do so unless he or she shall first fulfill the requirements of this act, and has received a certificate of licensure from the Bureau of Medical Education and Licensure.'' The significance of this clause must be apparent to everybody; namely, that anyone pretending to practice any branch of medicine or surgery must qualify himself or herself under the provisions of the medical act, to know how to determine what disease effects the patient upon whom they are intending to administer treatment. This, together with that part of section six of the act, which gives the Bureau of Medical Education and Licensure full authority to regulate and license any or all branches of medicine and surgery, opens the way for a proper regulation in all medical matters.

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[1] Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Tennessee, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming.

The first action of the bureau was to take up the matter of midwifery, but its funds being insufficient to properly regulate this branch of medicine, a separate act was introduced into the Assembly of 1913 which gave the bureau full power to regulate and control this practice, and carried with it its own appropriation. The appropriation granted by the Legislature for this work was not sufficient to establish a proper and competent control throughout the enormous territory of this great state. The bureau, therefore, has devoted its main energies to the two ends of the state most thickly populated, Philadelphia and Allegheny Counties. The balance of the state has been brought under control measurably through 112 different centers, scattered at points where the State Health Department has established tuberculosis dispensaries. The physicians in charge of these dispensaries, have in as far as possible been made the inspectors of midwifery of their several districts, and very encouraging results are being attained through many of them. Already a great many midwives who have violated the law have been prosecuted and convicted, and if the coming Legislature can be induced to appropriate a somewhat larger sum for this work, the competency of this control, and the value to the community, can be made much greater in future, with the present regulation as a basis.

The reports from the Pittsburgh and Philadelphia ends are encouraging to the degree that Pennsylvania has beyond doubt established in these great districts the most efficient control of midwifery known in this country. Very shortly, the bureau will be able to publish such accurate data and such improved results as will be a help to the entire country in the working out of this whole problem, which in the past has seemed so hopeless. Every effort is being made to establish a school of midwifery in Pennsylvania along the lines of that conducted at Bellevue Hospital, New York City, with the prospects of early success. The Philadelphia Health Department is coöperating earnestly with the result of the possible establishment, in the near future, of such a school at Blockley Hospital.

The efforts of the bureau were next turned to those people practicing medicine under the cover of different cults. Two classifications have been established through which to control the practice and future education of these people.

The term ''Drugless Therapy'' has been adopted to cover the practice of such cults as chiropractic, napravit, neuropathy, spondylotherapy, suggestive therapeutics, metaphysics, and various other cults based on the principles underlying the practice of these various methods of therapy. State licenses have been issued to certain ones of these practitioners who were already in the field who have been able to show certain qualifications of character and time of practice and education, as laid down by the bureau, limiting them in their therapy, strictly to drugless methods. The license issued to those practicing any branch of drugless therapy does not confer the right to use the title of ''Dr.'' nor does it authorize the holder to practice pharmacy, dentistry, osteopathy, nor to treat persons sick with quarantinable diseases, nor to practice surgery, midwifery, or medicine by the use of drugs administered internally or applied externally.

An examination was held for those persons pretending to a knowledge of these cults but who had been unable to establish the standard laid down by the bureau, which would entitle them to a license without examination. Henceforth, any person wishing to practice any of the subdivisions of drugless therapy as indicated above, must submit an educational qualification to the bureau before he or she can be admitted to a state examination for licensure consisting of the following: A preliminary education equal to that of a medical student, and the satisfactory completion of a three-year course of study in addition.

Means have been provided, in the medical schools of the state by which this course may be adequately given under the auspices of the schools. This course is sufficiently comprehensive to insure that the individual successfully passing it, as well as surviving the state examination, will be as amply able to make a successful diagnosis as will the full medical graduate. Thus, the future of the practice of any and all cults is secured for this state on a proper educational basis, and should solve the whole question of contention between various grades of medical practitioners for all time; and a barrier has been raised over which it will be extremely difficult for the incompetent or the crook to climb and continue to impose on the public. At the same time, the elements of good and truth which are contained in these cults are secured to medicine and are properly safeguarded in the interests of the public.

The second classification of the drugless people has been given the name of "Massage and Allied Branches." This classification takes care of all those people who conduct methods of therapy usually connected with hydrotherapy institutes. The educational qualification for these people has been set as a beginning on a basis commensurate with the necessities of the business. A preliminary education of a completed grammar school course, a four months' course of education in institutions approved by the bureau, followed by a state examination for licensure, insure a proper standard for the future. Persons practicing under this classification are licensed to do so only after the diagnosis has been made by some one authorized by law. The people in the field in these branches have been dealt with on similar lines with those in drugless therapy. The subjects involved are such as massage, hydrotherapy, thermotherapy, heliotherapy, electrotherapy, Swedish movements, mechanotherapy, and mechanical treatments of all kinds.

In the past, chiropody has been looked upon with a considerable amount of contempt, and medical men have not arisen to a full comprehension of the proper position this branch of medicine has assumed and must assume in the future. Pennsylvania is the third state to undertake its regulation, and has found ready cooperation in its effort amongst the men and women practicing the care of the feet. The people in the field who are already practicing chiropody and who could show qualifications laid down by the bureau were granted a license to continue their practice. All others practicing in the state were admitted to an examination in order to demonstrate their qualifications if they had any, and a license was issued to those who were able to pass this examination. For the future, it will be required of every person wishing to practice chiropody in this state to enter a state licensing examination and demonstrate his proper qualifications after having presented evidence of a preliminary education equal to a two-year high school course, and after having completed a course of instruction in a school of chiropody approved by the Bureau of Medical Education and Licensure, giving a course of eight months' actual work and sufficiently comprehensive, in anatomy, physiology, hygiene, pathology, and the practice of chiropody. An effort has been made, and will continue to be made, to establish a school of proper standard for the teaching of chiropody in this state on similar lines to the school of chiropody of New York City.

The bureau has recently taken up the subject of optometry, and has established a regulation and licensure for this branch of medicine. The practitioners in the field have been taken care of on similar lines as have been the other branches of medicine. The future standard of education for one wishing to practice optometry in this state will be the submission to the bureau of evidence of a preliminary education that is not less than two years in a high school, not less than two years' optometry work in the office of a licensed optometrist, and not less than two years' instruction in an approved optical school or college, and finally the passing of a state examination held by this bureau, this examination to include anatomy, physiology, practical and theoretical optics, and practical work in optometry. In view of these requirements it is most desirable that Pennsylvania have a school of her own on this subject, similar to that of Columbia College of New York and the one just established at the Ohio State University. Efforts will be made in this direction.

Of course, all of this has not been accomplished without a good many heartburnings, bitter dissensions, and contentions. But the Bureau of Medical Education and Licensure was established for the very purpose of overcoming these obstacles and bringing peace to a state overridden by contending medical men of all kinds. Whatever the difficulties to be met, the results have been secured, and the troubles of securing it are things of the past, or at least almost so. There are still a few rumbles of dissatisfaction, largely from incompetents who have been forced to seek other and more congenial fields of labor. These are rapidly becoming fewer and fewer. Pennsylvania, practically stands to-day at the point to which the Bureau of Medical Education and Licensure has labored continuously to bring her; namely, the cleanest state medically in the whole country if not in the world, with a future which insures the public of the state the service of men properly educated in all and every branch of medicine and in the accomplishment of this there has not been sacrificed to the people a single element of good which may exist in any of these branches. In fact, they have all been put on a plane from which the people practicing them will be able themselves rapidly and scientifically to develop the good that is contained in them, and in doing so, will add their contributions to the sum total of medical knowledge and will rapidly eliminate therefrom those portions which are based upon ignorance and superstition.

No one expects perfection, much less the Bureau of Medical Education and Licensure, and we are not at all sure that perfection is a good thing. Human nature itself is not perfect, and it is absurd to ask for a member that which the parent body does not possess. We do believe, however, that we have reached as near perfection in these matters as it is possible for man to come, or at any rate we have laid a solid and firm basis on which those of the future may build and reach a higher plane of perfection.

The bureau has felt that a plain statement of these accomplished facts, and the reason for and the manner of their accomplishment was due the public and the medical profession in all its branches; hence this paper. What the future may hold forth is of course uncertain, but it is sufficiently bright to far exceed anything of the past, or anything which might have been hoped for in Pennsylvania in the beginning of the year 1911.

DISCUSSION.

DR. WILLIAM L. ESTES, South Bethlehem: Dr. Baldy, who as you well know is well qualified, has given a thorough account and a very timely one, of what the Bureau of Medical Education and Licensure has done. This society owes to Dr. Baldy, perhaps more than to any other one man, thanks for what has been done in medical legislation for a number of years. For a number of years it was my fortune as the delegate from this society to be a member of the National Council on Medical Education. We discussed for almost ten years the questions of what seemed to be necessary for the advancement of medical education and registration. Even with the Carnegie Foundation's assistance in reporting the condition of medical schools, how utterly unequipped and unprepared were many of them, so bad indeed they had no cause for existence, it took these academic and sociologic meetings ten years to accomplish what has been done in the State of Pennsylvania in three years by statute law. I took the ground in these meetings that the only way we could obtain both preliminary preparations and professional and scientific training was to get on the statute books of the state a law requiring a certain definite advanced standard. That has been done in Pennsylvania and now all the states in the Union are looking to Pennsylvania as a guide in the direction of medical education and licensure. It is one thing to accomplish and put on the statute books, and quite another thing to keep a good law there when it is assailed by every irregular practitioner and trickster in the United States. As Dr. Baldy has well and appropriately said at the end of his paper, each member of this society should constantly be on the watch to do all he possibly can do to keep on the statute books these standards and to see to it that they shall not be tampered with in such a way as to bring about misconstructions.

There are certain indirect accomplishments not mentioned by Dr. Baldy which, if not of equal importance, certainly are of considerable value. One of these is the lessening the number of graduates in medicine in our state. It was generally regarded that one practitioner to every six hundred population, the average in the United States, was too many. Now by this law we have necessarily reduced, and it will continue to reduce the number of men who are graduating from our colleges, and in that way it will not only dignify medicine and advance the standard of practitioners, but give those who remain in medicine a better chance to earn a living.

Again, this law requires in one of its amendments that a student shall have spent one year in an accredited hospital before he is licensed. That necessarily brings about standardization of hospitals. This same body, of whom I spoke a moment ago, the National Association of Legislation and Medical Education, has been *talking* of standardizing hospitals after the way medical colleges have been standardized, through the assistance of the Carnegie Foundation, but with this law it is absolutely necessary that the hospital shall provide the required educational requirements before the student is allowed to go in and spend his year and receive his diploma afterward. This at once introduces gradation of hospitals. If a student goes into a hospital insufficiently equipped, he will not be regarded as a candidate for regular licensure. That necessarily will elevate the standard of hospitals. Hospitals now will have to organize themselves under the necessity to furnish the required standards in all the departments. Obstetrics, pathology and anesthesia are especially mentioned, and necessarily will lessen the functions of hospitals not capable of doing proper educational work, and they will have to pay good round salaries for men who enter them and serve as interns. This will bring about again betterment of the condition of our young graduates. The necessity of having or obtaining interns from this lessened number of graduates of course will restrict smaller hospitals, as I said, and make them pay a salary; it will act further than this, it will make them probably think two or three times about applying for aid from the state, because in the future, and it will not be very long, the state will require definite statement in regard to the ability of hospitals to treat patients in the approved way, before they will advance any moneys, or will contribute the money for the care of their wards.

So in every possible way, educationally, economically and socially this law is apt to do an immense good in our state, and I think of the men who have accomplished this, Dr. Baldy is certainly one of the leaders, if not the leader, and occupies, as he should, the prominent position of president of this Bureau of Medical Education and Licensure. We should feel deeply grateful to him for what he has done and we should try to carry on his work and prevent any retrograde step.

Dr. J. B. Carrell, Hatboro: What is the standing of the prescribing druggist who is not a graduate of medicine?

Dr. Baldy, closing: There are a large number of what might be called adjuncts to the practice of medicine which the bureau has not taken up. It is better to take up a stick at a time and break it and when well healed take up another. We are taking up what we consider the important things. There are many left and the prescribing druggist will find his time will come.

A leukorrheal discharge in a patient of forty calls for a vaginal examination as clearly as does a hemorrhage.

RETENTION OF URINE AND ITS TREATMENT.

BY THOMAS C. STELLWAGEN, JR., M.D.,
Philadelphia.

(Read before the Berks County Medical Society. August 11, 1914.)

This subject is of the greatest importance to the surgeon and to the general practitioner. A proper comprehension of it and the ability to relieve a sufferer often establishes the young doctor in a community. For these and many other reasons, a discussion relating to retention should not lack interest. Retention is a comparatively common condition more frequently encountered in the male than in the female. This difference in occurrence in sexes is self-evident when the usual causes of retention are considered. In the vast majority of cases it is associated with organic changes in the urethra or the bladder. These alterations are wrought usually by disease, either past or present. Owing to the much more complicated urethra of the male they are commoner in that sex.

The cause of retention may be congenital or acquired. In the majority of cases it is acquired, but in some rare instances the question of abnormality or prenatal defect must be carefully considered. For instance, retention in the newly born babe may be due to one of several causes for which when a doubt exists, the infant should be examined: (1) Imperforate meatus urinarius, either glandular or preputial; (2) marked phimosis simulating imperforate preputial meatus; (3) cyst of the sinus pocularis; (4) impacted mucus or calculus within the urethral canal; and (5) atresia.

After a careful examination without establishing any one of these possible causes as present the surgeon should consider congenital stricture of the posterior urethra. This is so rarely met with that many doubt its possibility, but it has in very rare instances accounted for retention. The pressure of a tumor, a cyst, or other outside influences, such as pelvic deformity, may be responsible for the trouble. Laceration, bruising or tearing of the urethra in delivery, especially where forceps have been used upon a breech presentation, might possibly produce sufficient injury to induce a stoppage in the urinary outflow. In the newborn infant the genitourinary surgeon should bear in mind the possibility of these conditions and should any of them exist, correct it. If it is imperforate glandular meatus urinarius the doctor should attempt to find the defective opening and either enlarge it or make one by cutting and dilatation. Imperforate preputial meatus urinarius and phimosis should be corrected by circumcision or the dorsal slit may be temporarily resorted to. Where the anterior urethra is apparently normal and there is no deformity to account for the retention, it may be that a cyst of the sinus pocularis is present. The cure for this is to rupture it. A probe is bent to conform to the curve of the urethra and after careful irrigation of the canal the probe is passed into the posterior segment of the urethra and generally succeeds in rupturing the cyst, which is usually followed by immediate relief from retention. A child's catheter may accomplish the same result. There is some danger in the use of a probe, for the infantile urethra is easily ruptured. We have operated upon a case of ruptured urethra in a child but a few hours old. The rupture was produced by the passage of a probe where the doctor, in attempting to rupture a cyst of the sinus pocularis, punctured the canal alongside of the cyst. In this case the wall of the cyst was tough and so protected by swelling and engorgement of the urethra that the probe perforated the urethra and made a false passage around the cyst. This resulted in an extravasation of urine into the periurethral tissues. The urine did not rupture through the anterior or the posterior layers of the triangular ligament, consequently the damage was not great. The cyst and rent in the canal wall were plainly seen, and the cyst scraped away, a catheter was inserted and the urethral opening drained. This patient recovered without apparent interference with micturition.

Impacted calculus or mucus is not of common occurrence, but has been encountered. The mucus is rarely troublesome but calculi are most annoying. The calculus seen in the newborn infant is soft and generally consists of a phosphatic deposit glued together by mucus and desquamated epithelium. Uric acid and calcium oxalate stones are sometimes met with. They can often be broken up or possibly removed by means of a bent wire or an alligator forceps passed into the canal. Failure to remove the stones should be followed immediately by an external urethrotomy. Partial atresia is not so rare a condition, for we have seen several cases in the genitourinary clinic of the Jefferson Hospital. It may be responsible for retention. Congenital stricture of the posterior urethra is very rare, we have seen only one case in a babe which, after a careful examination, we decided was stricture of the posterior urethra. In this case we diagnosed the trouble to be some faulty development of the prostatic portion of the canal. Probably a valve formation, for upon passing an instrument something seemed to give way before it. Following the instrumentation the patient bled profusely, some of the blood running back into the bladder and necessitating a suprapubic cystotomy.

At the time of operation the little finger was passed from the bladder into the prostatic urethra and what felt like a ruptured valve was scraped away by the finger nail. It was impossible to see because we did not wish to subject the patient to unnecessary surgical shock. This patient recovered, but it was necessary to pass bougies for some months after the operation. At the present time we have lost track of him but believe that he is comfortable and his cure complete.

We have seen one case of stricture of the prostatic urethra in an adult, a patient of the late Professor Orville Horwitz. External perineal urethrotomy was done and the constricting band divided. He recovered and apparently had normal control and expulsive power. In this case the condition was congenital, for his history presented evidence of micturition interference from early childhood.

Retention should be considered in a broad sense for it is far too important a subject and is caused by so many different kinds of lesions and conditions that it can not be treated in a too limited way; but our aim is to discuss a few of the more important phases, rules and procedures that have aided us as genitourinary surgeons.

Let us consider a case of retention in a man of middle age. To enumerate the causes of it at this period of life would require a more exhaustive consideration than this paper offers. We will be satisfied to mention a few of the more common causes producing it in the young adult: (1) Acute posterior urethritis; (2) acute prostatitis and abscess; (3) stricture of small caliber; (4) stricture of large caliber and spasm; (5) nervous spasm; (6) fistula in ano or abscess of the ischiorectal fossæ; (7) impacted stone or blood clot; (8) foreign bodies in the urethra; (9) constricting bands or other appliances about the penis; (10) abscesses involving or impinging upon the urethral lumen; (11) ruptured urethra, either partial or complete; (12) certain diseases involving the spinal cord, interfering with the nervous mechanism in control of micturition; (13) sclerotic changes in the corpus spongiosum or corpora cavernosa; (14) infectious diseases such as typhoid fever, pneumonia, smallpox, etc.; (15) in some nervous states; (16) defective bladders; (17) continuous priapism; (18) fractures and injuries to the bones of the pelvis; (19) injuries to the bladder; (20) obstruction of the bladder neck or urethra by parasites, such as echinococci.

There are many other causes of retention in male adults but some of those mentioned are the most commonly met. In the male past fifty there are other causes that should be added to those producing retention in the young adult, but in a general way most of them apply to the older patient as well. Prostatic enlargement and stricture are by far the most common causes. Stricture is usually the primary trouble.

Retention of urine is the inability of the bladder and urethra to empty themselves of urine and as we have already attempted to show is usually due to some obstruction either organic, parasitic or nervous in origin.

For illustration, let us suppose that a physician has recently arrived in a neighborhood and has received a call to attend a man who can not pass his water, what should be the first question to ask of the messenger? How old is this patient? Has he had trouble before? What apparently induced his attack? Should the patient be a young man we select those instruments devised for the purpose of passing through strictured urethras. If he be a man past fifty the doctor should be prepared to deal with an enlarged and congested prostate gland or a stricture. It is well to be always prepared to combat prostatic obstruction even in the young adult for an abscess, a congestion or other inflammatory change might be present. Any of these may necessitate the use of prostatic instruments.

We will first consider retention in a young man. The history should be obtained as to whether he has had injury, disease or other conditions of the urethra; then as to how the present trouble commenced. For the sake of an illustration, we generally get a report of his having had a stricture, which, owing to some indiscretion has apparently become congested, the consequent swelling still further narrowing the lumen of his diseased urethra to such an extent that it is impossible for him to pass water. What should the doctor do? He should first cleanse the glans penis meatus urinarius and anterior urethra by means of a suitable irrigating solution of which there is no better than a 1/5000 solution of permanganate of potash. After this a warm greased finger should be very gently passed into the rectum to determine the condition of the prostate; if this gland is found uninvolved then proceed as follows:—

Instill gently into the anterior urethra an emulsion of iodoform in tragacanth which should fill the anterior urethra between the meatus urinarius and the face of the stricture. By gentle manipulation and massage of the urethra we attempt to force some of the emulsion backward along the course of the stricture. This anoints it, opens the caliber and prevents, to a certain degree, laceration of the canal. After filling the urethra the filiform bougies or the filiform of a LaFort instrument is passed through the coarctation. Each filiform should be carefully tested to see that it will lace through the Gouley tunneled catheter and that it is strong and without defect. They are passed into the urethra and carried very gently and slowly down to the face of the stricture. They are then manipulated from several different angles and positions. If one can not be passed with the patient upon his back change his position to one or the other side. We have at times succeeded by putting the patient in the knee-chest position. Any one of these changes assists us in finding the entrance to the stricture. Should we be fortunate one or more of the filiforms may pass through into the bladder. If however, the attempt to pass a filiform is unsuccessful we may succeed by running a warm irrigating solution under pressure into the urethra; this procedure in some cases apparently dilates and relaxes the entrance into the stricture and enables a filiform to pass through. Should this procedure fail then withdraw all but one or two of the filiforms and pass a shotted flexible bougie down onto the face of the obstruction. Pressure upon this is made, tending to stretch the opening of the stricture, and by manipulating the filiforms around the tip and also changing its position we sometimes succeed in finding the entrance into the coarctation. These methods never entail force or much time and should always be tried. If however, they are unsuccessful the patient should be relaxed by some antispasmodic, a local or a general anesthetic given, the urethra thoroughly irrigated and a suitable form of endoscopic tube passed. By means of the endoscope we may find the entrance of the stricture and pass a filiform into the bladder. Should this attempt fail it becomes necessary to resort to aspiration, Cock's operation, suprapubic cystotomy or some other surgical procedure designed for the relief of such a case. If a filiform passes the patient is now safe; you should leave it in and secure it in position. By its presence capillary drainage will take place, spasm will relax and probably in a few hours another filiform may be inserted into the bladder alongside the first one. If not, the Gouley tunneled catheter may be passed over it into the bladder. From an over-distended bladder never draw off the entire amount of urine, always allow several ounces to remain as the danger of hemorrhage from sudden relaxation is great and may be fatal. Some surgeons recommend the leaving of the Gouley catheter in the bladder; this procedure is unnecessary and dangerous for it has done severe damage to both bladder and urethra. The patient is put to bed and genito-urinary sedatives and antiseptics administered. After a few days when the urgent symptoms have disappeared the patient can either be operated upon or gradual dilatation by means of the conical steel bougies may be commenced.

Before proceeding further we wish to say that in many of the cases of retention catheterization has been attempted by unskilled hands until the urethra has become so disturbed and irritated that to continue such a procedure will be followed by urethral fever. Therefore it behooves the man who knows to consider the limitations of human endurance and respect them. Usually the patient is found in bed or upon a couch with the pelvis sunken down into a soft mattress and in such a position that nothing short of a miracle would permit an instrument to pass. What is the first thing to do? Go to the kitchen and get either a large ironing board or a table top and after covering it with warmed blankets slip it under the patient so that the hips can be kept at a proper level and then commence operating. If a false passage has been made you may feel it with the instrument. The tip will impinge upon it and then slip over or into it. In some cases the tip can by a finger on the perineum or one within the rectum be guided over such an obstruction and into the regular urethral channel.

The other kind of case that we wish to consider is the type of retention seen in the old man with an enlarged prostate. Here there is a somewhat different state of affairs. The physician is called to attend an elderly man whose history is as follows: Male of sixty to seventy years of age who has had to arise several times at night to relieve the bladder. It is probably winter time and our patient has exposed himself to cold, wet or damp weather, following which he contracted a slight cold, or possibly from some indiscretion in diet he has induced a diarrhea with irritation of the lower colon. In the evening he notices a slight increased desire for urination. He retires and later on is awakened by the reflex of an over-filled bladder; he attempts to urinate but can not pass any water. This is almost surely a case of prostatic enlargement aggravated by congestion of the gland. He calls his physician who makes many unsuccessful attempts to relieve him. This doctor calls a second and so the gathering progresses until in despair and after a carefully considered consultation they decide to aspirate the bladder. This is perfectly good treatment and in many instances the relief from the overdistention is followed by a disappearance of the congestive symptoms in the prostate. Possibly the patient has the dribbling from over-distention and one or more of his medical attendants have advised the use of the suppository, the hypodermic and other antispasmodics. The hot flaxseed poultice and the sitz bath may often do much toward temporary relief. What I wish to impress is this, try the hot sitz bath and opium and belladonna suppository, the hot flaxseed poultice, and all other remedial measures in the beginning, for by their means we may succeed in relaxing spasm sufficiently to enable the proper type of catheter to pass. The method however that we believe to be original and which has given us the best success is as follows: First, warm the hands by immersion in hot water, then place a glove upon the right hand and, after thoroughly annointing the index finger of this hand, pass it with great gentleness into the rectum and palpate the prostate. This examination offers the surgeon a very fair idea of the kind of enlargement with which he has to cope and judging from the examination he can often form an idea of the deflection of the urethra that is present; he will then more often select an instrument that will, when gently and properly handled, pass directly into the bladder and relieve the distention. Failing to observe the above precautions he tries first one type of catheter and then another until finally he, by continuance of effort, finds the correct one. In the meantime the patient has often been tortured unnecessarily and the danger of urethral chills and urinary fever from trauma and instrumentation is greatly increased. Why should not the desired result be accomplished with speed and dispatch which in most cases it can? But we have never seen but one textbook and one teacher who recommended a preliminary prostatic examination. They generally advise first the use of the soft rubber instrument. This is probably correct but there are many cases where it will be found totally inadequate and what is the use of increasing the suffering and danger to our patients by excessive instrumentation?

To illustrate further, if the shock is caused from an excessively enlarged middle lobe it will be well to use at once the over-curved silver instrument devised by Bodie whereas if this enlargement is not of such extreme size the coudé or bi-coudé will in all probability answer our purpose. If the enlargement is due to an equal overgrowth of the lateral lobes alone, then the soft rubber instrument may answer. If one lateral lobe is enlarged more than its fellow there is reason to expect a deflection of the canal and the rat-tail or olivary-tipped instrument will best follow the tortuous urethra. If any of these unequal lateral lobe enlargements be associated with involvement of the middle or home lobe there are coudé and bi-coudé rat-tail instruments devised for just such cases. It always behooves the genito-urinary surgeon to act with decision and adroitness in such a case as we have described for by so doing he is enabled to accomplish the desired result without producing false passages, prostatic hemorrhages, bladder infections and the consequent illness accompanying excessive instrumentation. As a final admonition, never attempt instrumentation of the urethra in such cases without an antiseptic irrigation and always wash the canal and bladder after finishing the work. The administration of salol and quinin with an abundance of water to drink has saved many a prostatic from urethral fever. Do not allow a stricture case to go without operation as in most cases it is the only thing that will cure the patient. In prostatics it is wrong and bad practice where the man's condition would warrant a prostatectomy to allow him to go upon catheter life. In the great majority of cases the constant use of a catheter means that the patient's days are numbered and it is the duty of the physician to make it plain to him that the mortality rate from catheter life is practically one hundred per cent., whereas the death rate from properly performed prostatectomy is but two and one half per cent. and the relief in many cases is complete.

Be sure to attend the next meeting of your county medical society.

THE DOCTOR.

(Dedicated to L. C. Harman, M.D., Philipsburg, Pa.)

Who answers calls at any hour,
To ease the pains of rich or poor?
—The doctor.

Who enters in, where, all awry,
The household waits,—and takes full sway?
—The doctor.

Who takes the hand, so fever strick'n,
In fearless power our hopes to quicken?
—The doctor.

Who asks the sick, in surly tone,
To please be quick and show the tongue?
—The doctor.

Who then sits down with heavy frown
And opes his case of medicine?
—The doctor.

Who asks such things that no one knows
About our fingers—and of our toes?
—The doctor.

Who, with the love that mothers have,
Disease will fight, the sick will save?
—The doctor.

Who sits and talks, with quip and yarn,
To clear the air of—thunder-storm?
—The doctor.

And who, withal, the sick recovered,
With waiting debts is ne'er remembered?
--The doctor.

—Rev. H. K. Bower.

PROPAGANDA FOR REFORM.

Veracolate, Marcy and Co. Veracolate is a proprietary said to consist of the salts of the bile acids, sodium glycocholate and sodium taurocholate, with cascara and phenolphthalein. While bile salts are said to increase the secretion of bile, it is doubtful whether this increase in the secretion of bile is of value in the treatment of gall-bladder affections. There is no occasion for the use of bile salts combined with fixed quantities of cathartics, which should be added only when they are needed. The advertising claims for Veracolate show a tendency to extravagant statements (*Jour. A. M. A.*, Aug. 1, 1914, p. 420).

Hectine. Hectine, referred to in newspapers as a treatment for hay-fever, is a French proprietary, stated to have a composition similar to that of atoxyl. If its composition is in accordance with the claims its action probably is no better than that of atoxyl. Arsenic is used in the treatment of hay-fever with success in some cases (*Jour. A. M. A.*, Aug. 8, 1914, p. 502).

PoDoLax. A report from the A. M. A. Chemical Laboratory shows that PoDoLax, claimed to be "Podophyllin with the gripe taken out," is a phenolphthalein nostrum. PoDoLax is being extensively advertised by the E. E. Sutherland Medicine Company of Paducah, Ky. From the analysis made, it appears that PoDoLax is an aromatized syrup, containing phenolphthalein in suspension and fortified by the addition of an extract of senna. Its laxative action is due chiefly to the phenolphthalein of which each dose contains about 1.8 grain. Podophyllin was not found to be present (*Jour. A. M. A.*, Aug. 15, 1914, p. 595).

Digalen Omitted from N. N. R. In view of increased extravagance regarding the claims made for digalen by the Hoffmann-LaRoche Chemical Works the Council on Pharmacy and Chemistry decided to investigate the present eligibility of digalen. Examination demonstrated that the asserted presence in digalen of "amorphous digitoxin" was not substantiated by evidence, that digalen and digalen tablets were not constant in composition and action and that the claim that digalen causes less gastric disturbances than digitoxin was unfounded. While the manufacturer promised to hold the claim that digalen contained "amorphous digitoxin" in abeyance, they refused to concede the variable composition of digalen and reasserted that digalen was less liable to cause gastric irritation than other digitalis preparations. In view of the overwhelming evidence that digalen is variable in action and in composition and that it produces the same gastric disturbances as other digitalis preparations, the Council voted that digalen and digalen tablets be omitted from N. N. R. (*Jour. A. M. A.*, Sept. 5, 1914, p. 881).

Dose of Diphtheria Antitoxin. While 3000 units, the dose given in the Pharmacopeia, probably is a sufficient initial dose in many cases, this quantity is not enough to satisfy the factor of safety. There is a growing opinion that no case of diphtheria should receive less than 10,000 units as the initial dose (*Jour. A. M. A.*, Sept. 5, 1914, p. 873).

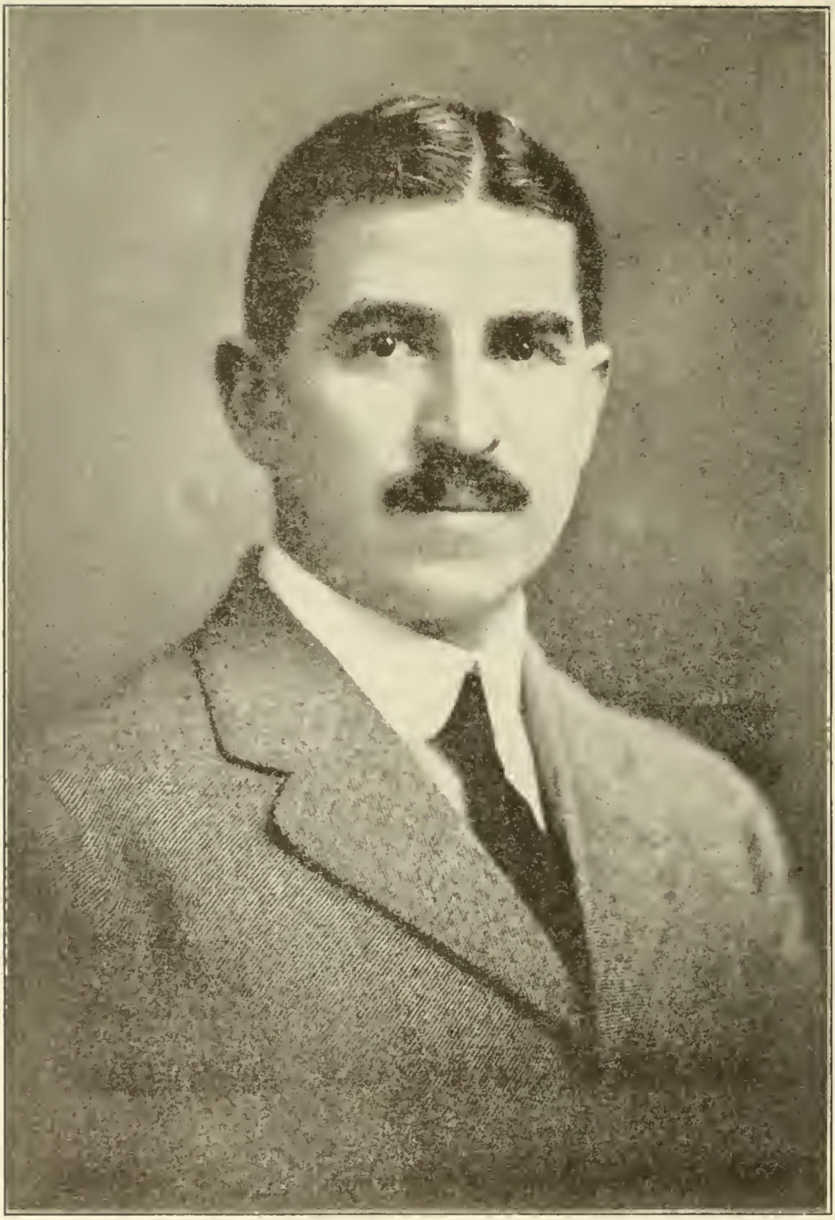
Vaccination against Smallpox and Typhoid. In view of the war, a general revaccination of the population of Paris has been ordered and huge quantities of antityphoid serum have been prepared (*Jour. A. M. A.*, Sept. 5, 1914, p. 873).

Angier's Emulsion. A report of the Council on Pharmacy and Chemistry points out that when Angier's emulsion, Angier Chemical Co., Boston, Mass., was first put on the market it was advertised as a "food-medicine" and an "ideal substitute for cod liver oil." Although the manufacturers now advertise this product as a laxative and state it to be "purely mechanical in its action" they still mingle with the new ones the old claims of "tonic and reconstructive merits" and thus attempt to perpetuate the erroneous belief that the preparation has nutritive value. As to the identity of the petroleum product contained in the preparation, regarding which the advertising circulars make contradictory statements, the A. M. A. Chemical Laboratory reports that this has all the properties of soft yellow petrolatum (*Jour. A. M. A.*, Sept. 12, 1914, p. 962).

Angier's Throat Tablets. These tablets are stated to be composed essentially of elm bark and petroleum and yet are claimed to "promote appetite and aid digestion." The A. M. A. Chemical Laboratory reports the tablets to contain about 12 per cent. of soft yellow petrolatum, like that found in Angier's emulsion (*Jour. A. M. A.*, Sept. 12, 1914, p. 964).

Antiseptic Action of Hexamethylenamin. The former opinion that hexamethylenamin possesses antiseptic action independently of the liberation of formaldehyd, was an assumption not founded on reliable experimental evidence. The recent investigations of Burnam, Hanzlik and others have shown that its action as an antiseptic depends on the decomposition into formaldehyd and ammonia which occurs only in an acid medium (*Jour. A. M. A.*, Sept. 12, 1914, p. 962).

CAT.



EDWARD B HECKEL, A.M., M.D., Pittsburgh.
President, 1914-1915.

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ATHENS, OCTOBER, 1914.

OUR PRESIDENT.

Dr. Edward B. Heckel, who has served as president during the past year with so much satisfaction to our members, continues as president throughout the coming year according to the new constitution, while Dr. John B. McAlister, president elect, has a year in which to become even more thoroughly familiar than he is with the members, the work and the needs of the society before assuming office. Dr. Heckel has ever been ready to serve the society and its members and has been a very efficient officer. His experience should enable him to do still more for the profession and the community during the coming year. He is in every way well equipped to act as the head of the medical profession in the second largest state in the Union. He received his early education in the public schools of Allegheny, was graduated from Allegheny College, Meadville, in 1887 with the degree of A.B. (A.M. in 1889) and received his medical degree from Bellevue Medical College in 1890.

No physician, however eminent he may be, can become an ideal president and leader of the medical profession unless he has worked himself up through the activities of the county and state societies. Dr. Heckel has always been active in the business and the scientific work of his county society, serving as censor, and as chairman of the legislative committee for several years, and as president in 1905. In the state society Dr. Heckel served as a member of the Auditing Committee from 1903 to 1907, member of the Committee on Transportation and Place of Meeting in 1906, chairman of the Section on Eye, Ear, Nose and Throat Diseases in 1907, chairman of the Committee on Arrangements in 1910, member of the House of Delegates in the American Medical Association in 1906 and '07, and as treasurer of the Committee on Benevolence since its formation. In the scientific work of the society he has always taken an active part.

Were it necessary to show further qualifications of our president as a leader mention might be made of the fact that he is a member ol the Pittsburgh Academy of Medicine and served as its president in 1898, and is a member of the American Academy of Medicine and of the American Academy of Ophthalmology and Oto-Laryngology. He is also an associate member of the American Ophthalmological Society, fellow of the American College of Surgeons, and member of the Phi Beta Kappa, Phi Gamma Delta, and Phi Beta Pi.

While scientific and executive qualifications and an unselfish interest in the profession are of prime importance to the success of a president of the Medical Society of the State of Pennsylvania, still it is the genial personality of the man that leads the members to rejoice that Dr. Heckel is, as it were, to serve a second term as president. S.

"ESTABLISHED VALUES IN DIETETICS."

During the past two decades the value of dietetics in the management of disease has come to be regarded in a new light. The modern clinician, be he specialist or general practitioner, is now unwilling to rely on the traditional dietaries which obtained twenty-five years ago, and which only too often find their way into modern textbooks: but insists on real dietetics based on the work of biochemists and physiologists.

Among the papers read at the recent meeting of our state society in Pittsburgh, that of Dr. Litchfield (see page 8) is distinguished by the bold plea therein set forth, for general recognition of the fact that a large proportion of the cases, which one has to treat, are in reality cases which present certain problems in nutrition. In many cases knowledge of the proper quality and quantity of food which a patient should receive would be found more valuable than treatment with the practical application of drugs.

Food stuffs are divided by Dr. Litchfield into two main classes, the dynamic and those which furnish little or no energy. The first class comprises milk, eggs, bread, butter, sugar and meat, and it is important that one should know their approximate caloric values as well as their purin content. The second class includes "roughage," such as lettuce, celery, greens, squash, cabbage, turnips, fruit, etc., of whose mechanical effects and of whose content of desirable and undesirable acids and salts one should be familiar.

Among the diseases in which food may be used specifically, the author mentions constipation, obesity, marasmus, gastric and duodenal ulcer, gout, eczema, scurvy, diarrhea, enteroptosis, hyperchlorhydria, diabetes mellitus, arteriosclerosis, and beri beri. One regrets to find no mention of psoriasis, which according to the brilliant researches of Schamberg and his associates, has been found to have an intimate connection with nitrogen retention.

Scientific dieting finds an application not only in diseased conditions but in health. Until the age of thirty protein may be eaten in larger amounts than in later years; after thirty there must be a reduction and after fifty a further reduction in order to avoid the wear and tear of eliminating needlessly high amounts of nitrogen. Attention is called also to the advisability of arranging diet according to occupation. That dietetic management of disease is to-day not a matter of carbohydrates, fats and protein, recent work has proven. Thus amino acids, once regarded as waste products, have been found to act as vitamins or essential food stuffs in some instances, while on the other hand certain amino acids, as tyrosin, are found to be injurious. The relation of certain lipoids to hemolysis is being closely studied although nothing fundamental has been established. The relation of diet or rather the relation of certain cleavage products to certain diseases, notably Graves' disease, diabetes, migrain and nephritis, is attracting attention. It is therefore seen that diet has become a question of tryptophan, lysin, glycocoll, tyrosin, tyramin, histamin, cholesterol, lecithin or other products of intermediary metabolism.

E. H. G.

THE WORK OF THE BUREAU OF MEDICAL EDUCATION AND LICENSURE IN RELATION TO STATE MEDICINE.

The paper read by Dr. Baldy at Pittsburgh before the last session of the Medical Society of the State of Pennsylvania and published in this issue of the Journal is worthy of note. It is the first authoritative report of the aims and results of the Bureau of Medical Education and Licensure to be placed before either the public or the profession, and at this time, on the eve of a new session of the Legislature, should be carefully read and studied by all members of the profession who are interested in the betterment of things medical. Beginning with a concise and moderate account of medical conditions in Pennsylvania prior to 1909, and giving a short history of the efforts to secure legislation to the end that Pennsylvania should be insured a responsible profession, Dr. Baldy gives in detail the manner in which machinery has been provided to overcome the abuses which were in existence, and the results already obtained. Without more detailed comment it is sufficient to note that in 1911 Pennsylvania did not reciprocate in licensure with a single state in the union, solely on account of her low standard, while at present twenty-eight states accept our certificates.

Very properly, nothing is included in this paper or rather report describing the trials and negotiations necessary to secure harmonious action from the medical colleges in regard to the standards for admissions, as well as certain modifications in courses of instructions; nor is there anything to mark the work accomplished to bring about the general acceptance by profession and public of the bureau as a state institution and not a sectarian instrument. And not the least of the triumphs of this bureau is that, mainly through its eminent fairness, in two short years this acceptance has been practically unanimous.

Of particular interest are those sections dealing with state control of midwifery and the numerous sects or cults practicing drugless therapy. While it is to be regretted that, on account of lack of funds, general state control of midwifery has so far been incomplete, a splendid beginning has been made and we can feel confident that in the near future the parturient women throughout the state, and especially in those centers where the foreign working population predominates, will be protected from the dangers of the ignorant midwife and the unholy alliance which exists in certain quarters between them and members of our own profession.

The report indicates wonderful results in such a short time, and while perfection has not been obtained and the average standing of our profession may be open to criticism, critics must remember that it will be a generation before the men who are now entering the profession will be the representative practitioners of the state and that time is necessary to realize the full fruits of the work inaugurated when the Legislature authorized the Bureau of Medical Education and Licensure. T. B. A.

CHANGE OF RIVALRY.

Each year several of the county societies have vied with one another to see which should be the first to get the amount of the *per capita* assessment into the hands of Treasurer Wagoner. Now that the new Constitution changes the method of receiving the *per capita* assessment, the rivalry at first will be to see which society will be the first to forward the assessment for some of its members, and later to see which society will be first to forward the assessment for the last one who is now a member. This pleasant rivalry will serve the state society well at this time as it now has only a small balance in the general fund for use up to January, 1915.

The assessment levied at Pittsburgh is for the sixteen months, September 1, 1914, to January 1, 1916, and is therefore $2.75 per member. Hereafter both the county and state society year will correspond with the calendar year and the amount of the assessment again being for only twelve months will probably be reduced. Fifty cents of the $2.75 will be set aside for the Medical Defense Fund, and ten cents for the Medical Benevolence Fund, leaving only $2.15 per member to pay for the cost of the Journal, for salaries, expenses of committees, expense of annual sessions, postage, and all incidental expenses up to January 1, 1916. S.

WHY THE CHANGE OF CONSTITUTION?

Heretofore in order that a component county society be technically in good standing in the state society it has been necessary for it to forward "the amount of its annual assessment within sixty days after receiving the treasurer's notice thereof." Only about one third of the county societies have forwarded their assessment within the specified sixty days and the last third of the societies have not paid their assessment until the last quarter of the society year. Thus, it has occurred as often as otherwise that a member of a county society who had paid his annual dues to his county society was not in good standing in either the state society or in the American Medical Association because his county society had not paid its assessment. In other words, the member who promptly paid his annual dues suffered because the other members did not pay their dues promptly enough to allow their county society to pay its *per capita* assessment in time.

Under the new constitution when a member pays his annual dues to his county society the local secretary takes out the amount of the *per capita* assessment due the state society and forwards it to the state secretary instead of turning over all that he receives to the county treasurer. In this way a member who has paid his county society dues becomes a member in good standing of the Medical Society of the State of Pennsylvania and of the American Medical Association as soon as his *per capita* assessment is received by the state secretary. The local secretary is expected to forward the assessment as often as every two weeks previous to March 28, 1915, and thereafter daily should any new members join or any of the former members pay their dues. Section 2 of Article IV. of the new Constitution reads as follows:—

> The secretary of each component county society, acting as the agent of that society and its members, shall forward to the Secretary of this Society the names of those who have paid their dues for the current calendar year, together with the *per capita* assessment for such members and a duplicate of the receipt given each member. Members whose assessment is received by the Secretary of this Society on or before March 31 shall be entitled to all the privileges of the Society for the current calendar year. One whose assessment is received after March 31 shall be entitled to all the privileges of the Society except that he shall not be entitled to any benefit from the Medical Defense Fund from January 1 up to the date of the receipt by the Secretary of this Society of his name and assessment. The *per capita* assessment for new members elected and reported during November and December shall cover the assessment for the following calendar year.

S.

"MODEL CONSTITUTION FOR COUNTY SOCIETIES."

There will be found in the Minutes of the House of Delegates in this issue a Draft of Model Constitution and By-Laws for County Societies as approved by the House of Delegates at Pittsburgh and recommended for adoption by the component county societies. The change of constitution of the state society necessitates changes in the constitutions of all the component societies, many of which are out of date and sadly in need of revision. The Model Constitution is not put forward as a perfect production but the committee that drafted it consulted the constitutions of all the county societies and also the Principles of Ethics of the A. M. A., and it is believed that it will be found worthy of adoption by the component societies. Certain changes will be required to adapt it to some societies, as for example trustees should be provided for in such societies as are chartered organizations, some societies will wish to have more committees, others different annual dues, etc.

The change of constitution of the state society will for a time cause some confusion and it will be impossible for the officers of some societies at once legally to comply with all its requirements, but it is hoped that the officers and members of the county societies will be willing to make any necessary changes in their constitutions as soon as is consistent with their present laws, and if necessary to give up some of their own personal conveniences and preferences. More uniformity in the laws, rules and regulations of the several county societies instead of working any hardship will greatly facilitate the work of the societies and lessen complications and misunderstandings.

The committee has been asked why it does not recommend a membership or entrance fee, and the answer is that all eligible physicians should be encouraged to join the county society as soon as they begin the practice of medicine and entrance into a society should be made as easy as possible to the young physician. If the entrance fee is for the purpose of securing more revenue, then it may be answered that the extra revenue should come from those who have an established practice rather than from the beginner. The annual dues in the Luzerne County Medical Society are ten dollars, but new members are charged only five dollars a year for the first two years. In like manner the committee has considered all the various requirements now in vogue in the different societies and believes that it has good reasons for the regulations suggested. Nevertheless, each county society must within reason and within legal bounds be the judge of its own membership and its own laws. Reprints of the Model Constitution can be supplied to officers and committees gratis, or in larger quantities at twenty cents a hundred. S.

THE SECTION ON MEDICINE AT PITTSBURGH.

In the opinion of many, the Section on Medicine surpassed, in point of members in attendance and in scientific character, any former meeting of the section. The subjects of the papers were timely and up to date, and the papers well prepared by their authors. The readers knew that the men selected to open the discussions would be present. Copies of the papers had been mailed to the discussors two weeks in advance of the meeting, so that the discussions were concise and to the point.

In addition to other papers of special interest, that of Major Whitmore, U.S.A., who was selected by the Surgeon-General, was a large drawing card at the Wednesday afternoon meeting, which lasted from 2 o'clock to 6:15 and was attended by over three hundred.

It was very pleasing to note that, at the section meetings, the authors of papers did not look through the glass doors, rush in just before their papers were called and, after reading them, slip out when they thought they were not noticed, but came in at the opening of the meeting, sat down and waited their turn and remained until the end of the meeting. Is it any wonder that there was a large attendance? It is to be hoped the Philadelphia Session in 1915, in point of numbers and the character of the papers, will surpass the Pittsburgh Session, but, if it does, we must be up and doing.

S. S.

THE SECTION ON SURGERY.

During the sixty-four years of its existence the prosperity of the Medical Society of the State of Pennsylvania has in the main been continuous and progressive, though never as yet have we reached a point where interest and experience could be used as a priceless heritage, and, if we are to accept the Section on Surgery of the present session as the height of efficiency to which we have as yet attained, it must be apparent to all who were in attendance on the section that the sum total of labor expended in behalf of it has not received the enthusiasm of the surgical profession of Pennsylvania that it deserved. The alleged high mark of progress to which the profession claims to have ascended, it would seem, should have demanded a more wide-spread interest in the scientific program presented, which must be admitted to have embodied advanced scientific and practical surgery, presented in such a manner as to render it most desirable for postgraduate instruction.

The scientific program committee, upon whom the labor of preparing such a program fell, are to be congratulated for having presented their program in such a manner as to enable the profession to gain a working knowledge had they wished thoroughly to inform themselves in the progress of surgery. At no one of the three section meetings were there two hundred members in attendance. This apparent lack of interest is worth the time and attention of every member interested in the further progress of an organized profession, and especially of those who are deeply stirred by the conviction that we have come to a critical turning point. The question most naturally to be asked is what is the cause for this lack of interest which we should always strive and most earnestly seek to accomplish, and in which we must succeed or the section is fated to break down before bearing fruit from the labors already expended.

In these days of progress, reform and general surgical uplift, to have authority and popularity steadily increase, the labor of developing the section to its highest scientific and social position must rest upon the shoulders of each and every member individually and from this viewpoint it may not seem presumptuous to venture the suggestion that several factors now existing may, if remedied, prove helpful. It should aid the efficiency of the section if the chairman and secretary were elected for two years, it being difficult as at present to prevent losing a part of their effectiveness to the section because of their lack of experience as to the wants and needs of their offices; another suggestion is that steps be taken to bring together more often throughout the year the actual workings of the various committees. As now conducted there seems a studied effort on the part of each rigidly to maintain separation from the other; this I think a mistake. Again it would require but little additional time and expenditure if the chairman of the section were authorized to call into conference, early in each year, the president of each component county society throughout the state who should be privileged to appoint a representative surgical member of their respective societies to act with the chairman of the section as a conference committee. In this way the wants and needs of the various county societies of the state would be made known and a wider and more general representation on the scientific program would be assured. Such a project would also offer greater opportunity for prompt and thorough discussion and final decision than under our present system, which leaves open to criticism by members in rural sections the accusation of local monopoly of the scientific program. The committee thus formed should be privileged to attend and take part in the discussion of all subjects brought before the existing official committees.

It is not from fear of sectional domination that these suggestions are brought forward, but rather that our affairs are at present conducted upon too narrow a view and by too few in counsel. The aim of this section should be to make it possible for every surgeon in this state to become conversant with a knowledge of events that are daily transpiring in our progressive surgical world and to familiarize himself with the individual methods of their execution by his confreres. An excuse of want of time should not be accepted as a reason for the absence of any member or the lack of interest in the scientific program, and a larger representation in the development of the program should increase interest in attendance upon these meetings. Perhaps the proximity of the sessions to the opening of the medical schools and to the vacation period explains the compulsory absence of many. Perhaps these two reasons may be assigned also as the cause for the hasty visits of some who participate in the program. It should add greatly to the usefulness of the section if each member could find it convenient to be present throughout the entire session, for with the identity of theory largely lost in the program and that of practical application to everyday usage in surgery made clear, especially in the scientifically accurate methods of diagnosis and treatment, the time thus spent should prove of equal, if not greater, value than our labor otherwise expended, as the highest privilege of the mind is that allotment where science is the support of our methods. L. J. H.

THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

The section meetings, with Dr. Howard F. Hansell of Philadelphia in the chair, were well attended. The Clinical Session on Tuesday afternoon was very interesting and instructive, and brought forth considerable discussion. The papers were of high order, particularly the one on "Borderline Topics in Ophth-Oto-Laryngology" by Dr. Joseph C. Beck, of Chicago. This paper was indeed very timely and appropriate in this day of specialism and was appreciated by all present. N. S. W.

THE PITTSBURGH SESSION.

After reading the editorials and the county bulletin excerpts in this issue it will be admitted that the session at Pittsburgh last month was equal in every respect except in numbers of any previous gathering of the society. There were 1151 registered, as compared with 1565 in Philadelphia last year, 1020 in Pittsburgh in 1910, and 1232 in Philadelphia in 1909.

There were five meetings of the House of Delegates, one on Monday evening, three on Tuesday, and one on Wednesday. The new constitution as reported by the Committee on Society Comity and Policy came in for considerable criticism, and yet, with the exception of the sections having to do with the representation in the House of Delegates, it was almost unanimously adopted. Those who have given it the most careful consideration feel that after the transition period has passed it will prove more satisfactory than any former constitution. The election of nearly all the officers was without contest.

The Secretaries' Conference and the meeting of the House of Delegates on Tuesday evening interferred somewhat with the attendance at the popular meeting, at which Professor L. O. Howard, Washington, D. C., gave an interesting lecture on "Some Insects that Carry Disease," illustrated by stereopticon slides.

The chief social event of the session, and one that will long be remembered by those who were present, was the brilliant reception and ball at Hotel Schenley, Wednesday evening, in honor of the president of the society. As a fitting close of the social features was the visit on Thursday evening to the Pittsburgh Exposition, with a concert by Sousa and his band, as well as the many features illustrating the industries of Pittsburgh. The smoker on the same evening after the excellent moving pictures by Dr. Weisenburg brought out as many men as there were both men and women at the president's reception the previous night, and there were probably more than one member from Pittsburgh present who had not taken time to register at Carnegie Institute during the four days of the session. The banquet for women physicians arranged by the local committee as a complement to the smoker, was much enjoyed by twenty-six women physicians. Dr. Esther L. Blair acted as toastmaster and responses were made by all present. S.

THE OPEN MEETING FOR WOMEN.

The Open Meeting for Women which was held on Wednesday afternoon, September 23, at the Hotel Schenley, while not as largely attended as the similar meetings held in Scranton and Philadelphia, attracted an interested and intelligent audience. Dr. Rosalie Slaughter Morton of New York City spoke very entertainingly on the "Relation of Woman's Health to Efficiency" and brought out many practical points. The subject was further discussed by Drs. Persis R. Straight of Bradford, Alice Seabrooke of Philadelphia, Lenore Gageby of New Castle, Luba Goldsmith, Amelia Dranga and Laura Shrom of Pittsburgh. Dr. Elizabeth L. Martin of the Committee on Health and Public Instruction presided and spoke of the aims of the Committee for the Public Health Education among Women and of some of the work that was being accomplished. She asked for the coöperation of the women of Pennsylvania that more good may be done. B.

SURGICAL PAPERS FOR THE 1915 SESSION.

As it is customary for the program to be filled in January, and as the number of papers is limited, the secretary of the Section on Surgery requests early application by prospective essayists with subjects of papers. A. R. MATHENY, Secy., 7032 Hamilton Ave., Pittsburgh, Pa.

CRESSON, THE HOME OF THE SANATORIUM.

While years ago it was the belief that to live in the vicinity of a sanatorium or hospital for the treatment of tuberculosis was to be exposed to the disease, people now believe that the town selected as the site for a sanatorium is a healthful spot in which to locate. This is evidenced by the following excerpt from the Johnstown *Leader*:—

> "The year before the sanatorium was erected there was plenty of room in the public schools. Today the schools are in such overcrowded condition that the authorities have found it necessary to hold only half-day periods so that all the children can be accommodated every school day. . . . . An addition to the school building is being rushed to completion by the contractors, the Pennsylvania Lumber company. A number of additional rooms will be afforded. A gymnasium will also be furnished. The second floor of the addition will include a large auditorium.
>
> "There is an increased demand for homes in Cresson too. There have been no new industries to attract the home builder. Work is not plentiful and the town gets very little advertising of any kind. Among the people who believe that it is the state sanatorium that is attracting families—big families—to Cresson is Prof. Hostetter, principal of the Cresson public schools."

B.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the September JOURNAL was printed:—

ADAMS COUNTY: *Removal*—Robert E. Lau from East Berlin to York (York Co.).

Allegheny County: *New Members*—Alfred W. Crozier, Robert Burnsides Ferree, Walter G. Graham, Sumner Clelland Simpson, Edward William ZurHorst, Pittsburgh; Robert S. Hinchman, Herbert S. VanKirk, William T. Miller, McKeesport; Charles F. Keyser, Stephen S. Landis, Duquesne; Louis Northrup Smith, Swissvale; Edytha Elizabeth Taylor, Crafton. *Death*—John H. Burkett (Miami Med. Coll., Cincinnati, O., '71) in Remington, September 15, aged 74. *Transfer*—John L. Miller to Beaver County Society.

Armstrong County: *Transfer*—Charles F. Seaton to Westmoreland County Society. *Deaths*—Robert P. Marshall (Miami Med. Coll., Cincinnati, O., '73) in Kittanning, August 19, from cerebral hemorrhage, aged 66; William B. Walker (Cincinnati Coll. of Med. and Surg., '73) in Dayton, September 19, aged 63.

Beaver County: *New Member*—John L. Miller, Aliquippa (by transfer from Allegheny County Society).

Berks County: *New Member*—David W. Morgan, Reading.

Blair County: *New Member*—Peter Giacchelli, Altoona.

Bradford County: *New Member*—John Mark Higgins, Sayre.

Cambria County: *New Member*—Harry G. Nickel, Johnstown.

Center County: *Removal*—John V. Foster from Center Hall to State College.

Chester County: *Death*—Linwood S. Corson (Temple Univ., Med. Dept., Philadelphia, '07) of Glenmore, in Philadelphia, September 26, aged 41.

Clarion County: *New Member*—Sloan A. Brown, Foxburg. *Removal*—J. M. E. Brown from New Bethlehem to Kittanning R. D. 5 (Armstrong Co.).

Clearfield County: *Death*—Frederick B. Read (Jefferson Med. Coll., '67) of Osceola Mills, in Ebensburg, September 29, aged 68.

Cumberland County: *Resigned*—John M. Boyd.

Dauphin County: *Removal*—Thomas H. A. Stites from Harrisburg to Hamburg State Sanatorium, Hamburg (Berks Co.).

Delaware County: *Removal*—Prosper J. Boudart from Chester to 1637 Ritner St., Philadelphia.

Fayette County: *New Member*—Robert E. Heath, Fairchance (by transfer from Westmoreland County Society). *Removal*—Joseph Georgessi from Connellsville to Brownsville.

Indiana County: *New Member*—J. S. Miller, Clymer. *Resigned*—Charles M. McEwen. *Removal*—John Henry Smith from Bradford (McKean County) to Harrisville (Butler Co.).

Jefferson County: *Removal*—David W. Thomas from Benezette (Elk Co.) to Force (Elk Co.). *No Longer Members*—J. Miles Grube, Sylvester S. Hamilton, Guy M. Musser, John R. Whann, Jr.

Lackawanna County: *New Members*—G. Edgar Dean, Frank G. Bryant, Herbert D. Gardner, Henry Halpert, Nelson E. Newbury, Irwin W. Severson, Scranton; John W. Houser, Taylor. *No Longer Members*—Percy DeLong (left county); Lucius M. Elsinger.

Lancaster County: *Death*—Harry J. Huber (Jefferson Med. Coll., '09) in Ephrata, September 21, aged 36.

Lawrence County: *New Members*—Herman D. Boyles, Patrick J. Brice, Thaddeus C. Brown, John D. Tucker, New Castle.

Luzerne County: *New Members*—John Webster Cressler, Wilkes-Barre; John Phillips Dougherty, Ashley.

Lycoming County: *Death*—Truman G. Wilkinson (Medico-Chi. Coll., '99) was found dead in his office in Reading (Berks Co.), September 3, aged 36. *Removal*—Julia C. Cotton from Jersey Shore to Greystone Park, N. J.

Montgomery County: *New Member*—Robert P. Elmer, Wayne (Delaware Co.).

Philadelphia County: *New Members*—John Edgar Burnett Buckenham, Allen G. Sampson, George B. Slifer, Philadelphia. *Deaths*—Morris Longstreth (Jefferson Med. Coll., '69) of Philadelphia, in Barcelona, Spain, September 19, aged 68; Harry Newmayer (Univ. of Pennsylvania, '11) in Philadelphia, September 30, aged 24; Horace K. Regar (Univ. of Pennsylvania, '78) in Philadelphia, September 14, aged 55. *Removals*—John J. Mullowney from Harrisburg (Dauphin Co.) to Paxtang (Dauphin Co.); Marie A. Seixas from San Juan, Porto Rico, to 820 South 55th St., Philadelphia; Arthur E. Simonis from Philadelphia to 1011 Gary St., Shreveport, La.; Edna S. Valentine from Philadelphia to Fruitland Park, Fla.

Tioga County: *New Member*—David A. Patterson, Westfield.

Venango County: *New Member*—Winnie K. Mount, Oil City.

Warren County: *Removal*—Anna H. S. Flatt from Eagle Rock, Cal., to St. Helena, Cal.

Washington County: *New Members*—Charles T. Graves, Monongahela; James E. Wilson, Langeloth. *Removals*—Edward E. French from Ellsworth to Bentleysville; Lilly G. H. Pridgeon from Canonsburg to 12 Congress St., Pittsburgh.

Westmoreland County: *New Members*—John Steel Anderson, Greensburg; Evan I. Brown, West Newton; Charles F. Seaton, Crab Tree (by transfer from Armstrong County Society). *Transfer*—Robert E. Heath to Fayette County Society. *No Longer a Member*—Oliver C. Engel (left county).

York County: *New Member*—William J. Schenberger, New Bridgeville.

Present membership 6568. S.

STATE NEWS ITEMS.

BORN.

To Dr. and Mrs. J. Paul Frantz, Philadelphia, September 21, a son.

MARRIED.

Dr. Frank P. Dwyer, Renovo, and Miss Mary Howell, Altoona, July 29.

Dr. Abram Bowker and Miss Irene Larsen, both of Philadelphia, October 5.

Dr. Frank C. Boucek and Miss Margaret Louise Puhl, both of Pittsburgh, October 6.

Dr. George W. Lang, Alicia, and Miss Leta McAlpine, in Brownsville, September 26.

Dr. J. Leslie Davis and Miss Izora Venetta Hunter, both of Philadelphia, October 14.

Dr. Vincent J. Mulvehill, Carrolltown, and Miss Delrose Williams, Altoona, recently.

Dr. Milton K. Meyers, and Miss Ethel K. Altshuler, both of Philadelphia, September 15.

Dr. John Howorth and Miss Florence Loretta McDaniels, both of Wilkes-Barre, September 23.

Dr. John L. Miller, Aliquippa, and Miss Florence Nellie Molter, Warrendale, at Suterville, August 27.

DIED.

Dr. John T. Nolan (Jefferson Med. Coll., '08) in Philadelphia, August 27, aged 28.

Dr. Mahlon H. Beary (Keokuk Med. Coll., '80) in Allentown, September 18, aged 74.

Dr. Joseph H. Lopez (Jefferson Med. Coll., '76) in Philadelphia, September 15, aged 75.

Dr. James T. Wilson (Univ. of Pennsylvania, '64) in Tyrone, September 23, aged 74.

Dr. Robert J. A. Irwin (Western Reserve Univ., Cleveland, '84) in Pittsburgh, September 1.

Dr. John F. Mackley (Coll. Physicians and Surgeons Baltimore, '82) in Fairfield, September 16, aged 59.

Dr. Alexander Hazard (Univ. of Pennsylvania, '67) of Philadelphia, in Atlantic City, N. J., August 25, aged 67.

Dr. Samuel Robinson Fife (Western Reserve Univ., Cleveland, '62) in West Elizabeth, September 3, aged 81.

Dr. James Singleton Shoemaker (Hahnemann Med. Coll. and Hosp., Philadelphia, '88) in Philadelphia, October 8.

Dr. Albert F. Brandt (Pulte Med. Coll., Cincinnati, '78) of Harrisburg, in Mechanicsburg, September 9, from heart disease, aged 78.

ITEMS.

Dr. Henry J. Benz has succeeded Dr. Henry B. Burns as superintendent of the Bureau of Child Welfare of Pittsburgh.

New Hospital at Carlisle. Ground was broken on July 20, for the new Carlisle Hospital, which is estimated to cost $50,000.

Dr. Addinell Hewson has been elected professor of anatomy and histology in the medical department of Temple University.

Dr. Adolph Koenig, Pittsburgh, has been reappointed a member of the State Bureau of Medical Education and Licensure.

Dr. Robert N. Willson has been appointed a member of the visiting staff of physicians at the Philadelphia General Hospital, to succeed Dr. William E. Hughes, resigned.

Dr. H. W. Salus, Johnstown, has been appointed state medical inspector for Cambria County in the Department of Labor and Industry.

Dr. Henry Leffmann gave an illustrated lecture on the Water Supply of Ancient Jerusalem before the Philadelphia Engineers' Club, recently.

Dr. Laura Hunt has been appointed Professor of Otology at the Women's Medical College, to fill the vacancy left by the death of Dr. Emma Musson.

Dr. Frank H. Husted, Philadelphia, was elected surgeon general of the Veterans of Foreign Wars of the United States, in Pittsburgh, September 17.

Dr. Arthur A. Stevens has been appointed visiting physician to the Philadelphia General Hospital in succession to Dr. Augustus A. Eshner, resigned.

Dr. Harriet L. Hartley, clinical professor of surgery, Women's Medical College of Pennsylvania, gave the address at the opening of the session September 16.

Typhoid at Lehigh University. Some twenty cases of mild typhoid fever have developed this month among the students of Lehigh University, South Bethlehem.

Hospital Corner Stone Laid. The corner stone of the new wing of the American Oncologic Hospital, Thirty-Third St. and Powelton Ave., Philadelphia, was laid August 28.

Dr. Thomas H. A. Stites of Harrisburg, has been appointed by State Commissioner of Health Dr. Samuel G. Dixon medical director of the new sanatorium for tuberculosis at Hamburg.

Dr. Henry A. Dirschedl, Pottsville, has received his commission as first lieutenant assistant surgeon of the Pennsylvania National Guard, and assigned to the fourth regiment, fourth brigade.

Clean-Up Day for Rural Schools. Samuel Hamilton, superintendent, selected Saturday, October 17, or any other convenient date, for improving and beautifying the school grounds and buildings.

Dr. Charles J. Hatfield, Philadelphia, has been elected executive secretary of the National Association for the Study and Prevention of Tuberculosis, to succeed Dr. Livingston Farrand, New York, resigned.

Mortality in Philadelphia. During the week ending September 5, the number of deaths from all causes in Philadelphia totalled 468, an increase of forty-three over the number reported in the corresponding week last year.

The Weekly Roster of the medical organizations of Philadelphia began its tenth volume, September 5, with an enlarged page, an increased number of pages, larger type, more scientific matter and a number of selected advertisements.

Official Bulletin of Health. Director James F. Edwards of the Department of Public Health of Pittsburgh, has begun the issue of a monthly bulletin known as "*The City's Health*," the first issue of which is devoted to the care of babies.

Roof-Garden for Hospital. The new roof-garden for the Allentown Hospital was opened on September 23. It will accommodate 20 patients, and it is intended for those suffering from pulmonary tuberculosis, pneumonia, and typhoid fever.

New Medical Building at Wilkes-Barre. Plans have been completed for the new building of the Luzerne County Medical Society and work has already begun. It is to be a fireproof structure of brick and stone and the cost will be $20,000.

The Carbon County Medical Society was treated to a clam bake at Lake Mineola, Broadheadsville, August 28, by Dr. John W. Luther. It rained a little all the afternoon and kept many away, but those present had a good time and left with well-filled stomachs.

Typhoid Fever at Warren. Twenty-three cases of typhoid fever have been reported to the health authorities in Warren, said to have been due to impure milk. Commissioner Dixon has sent two typhoid fever experts to the infected district and an inspection of all dairies has been made.

Gifts to Hospitals. A legacy of $8000 from Dr. Annie M. Hawley, Pottstown, goes to the Pottstown Homeopathic Hospital. Mr. George W. Nevil, Philadelphia, has given $18,000 to the Home for Incurables, $5000 each to the German Hospital, the Jewish Hospital, the Pennsylvania Hospital, and St. Joseph's Hospital.

Radium Treatment to be Given at Jefferson Hospital. It is reported that a radium department is to be opened at Jefferson Hospital, Philadelphia, in the near future. Twenty-five hundred dollars worth of radium has been purchased from the Lucy Henderson fund of $5000 recently presented to the hospital for the establishment of a department for radium treatment.

Rat Extermination. Director Richard H. Harte of the Department of Public Health and Charities invited several hundred business men to a conference on the extermination of rats, September 28. Assistant Surgeon-General Leland E. Cofer, Washington, Surgeon Fairfax Irwin, U.S.P.H.S., addressed the meeting and a special appeal was made for the coöperation of business men and property owners in the campaign against rats.

Cumberland Valley Physicians Meet. At the annual meeting of the Cumberland Valley Medical Association held at Boiling Springs Park, September 3, the following officers were elected: President, Dr. Charles M. McLaughlin, Greencastle; Drs. S. Seibert Davis, Boonesboro, Md.; Samuel E. Mowery, Mechanicsburg, and John W. Croft, Waynesboro; secretary, Dr. John J. Coffman, Scotland, (reëlected); treasurer, Dr. Paul P. Allen, Chambersburg.

The Child Federation of Philadelphia held its first annual meeting, October 6. The president, in his address recited the following activities of the past year: The Neighborhood Baby Saving Show, which was sent into nine districts of the city, and the City Hall Baby Saving Show, which was open from May until the present (there were over 300,000 visitors); the Baby Improvement Contest, which was the first of its kind ever held in the country; the Christmas tree which stood in Independence Square from Christmas Eve until New Year's Eve; the Little Mothers' League, which were classes for the instruction of young girls in the care of their little brothers and sisters; the organization of the Baby Welfare Association in which ninety-six organizations of the city which are doing baby work were combined for a concerted effort for reducing infant mortality. The federation has been in existence a little over a year and the activities in which it is engaged have more than justified the existence of such a society. The officers for the next year are: President, Edward W. Bok; vice presidents, Drs. S. McC. Hamill, Joseph Neff, and Henry D. Jump; secretary, Dr. Howard C. Carpenter; treasurer, Albert P. Gerhard, Esq.; directors, Edward W. Bok, F. Wallis Armstrong, Miss Davies, Albert P. Gerhard, John D. Johnson, W. J. McCahan, F. J. McIlhaney, Mrs. A. Stengel and Drs. W. N. Bradley, H. C. Carpenter, C. A. E. Codman, S. McC. Hamill, Henry D. Jump, Joseph S. Neff and W. D. Robinson.

GENERAL NEWS ITEMS.

Dr. John McGaw Woodbury, commissioner of street cleaning under Mayor Low in 1902, died at Southampton, L. I., September 23.

Dr. J. G. Adami, Montreal, has enlisted as a private in the battalion which is being raised at McGill University for service in the European War.

The American Public Health Association will hold its forty-second annual meeting in Jacksonville, Fla., November 30-Dec. 5. This will be preceded by the Southern Health Exhibition.

The American Association for Study and Prevention of Infant Mortality will hold its fifth annual meeting in Boston, November 12-14. The chairman of the Committee on Local Arrangements is Dr. Hugh Cabot, 87 Marlboro St., Boston. The executive secretary is Gertrude B. Knipp, 1211 Cathedral St., Baltimore, Md.

Free Medical Attendance for Dependents of British Soldiers. The British government has accepted an offer from the British Medical Association and the Pharmaceutical Society of Great Britain to give free medical attendance and drugs at cost price to dependents of men serving with the colors whose circumstances justify such relief. The service will be administered through local relief committees which are now being formed in counties, boroughs and urban districts.

Alcohol Forbidden in the German Army. Strict orders were issued at the time of the mobilization of the army that no one should offer or sell to any of the troops any alcoholic drink. The sale of liquor of any kind at the stations was forbidden. A Munich exchange remarks that in 1870 floods of beer were offered to the troops passing through the city on their way to the front and discipline suffered thereby in many instances; the present orderly mobilization, it adds, shows a marked contrast in this respect. The editor of the Journal was informed by a commissioned officer during the Spanish war that he saw a train, loaded with provisions and medical supplies urgently needed for the soldiers in camp in Georgia, sidetracked to allow a train consisting mostly of cars filled with beer the right of way.

More Red Cross Surgeons Wanted. So appalling is the number of casualties in the European war that the regular and volunteer surgeons attached to the armies are utterly unable to take care of wounded, many of whom, after days of suffering, die from sheer neglect. There is work, therefore, for an almost unlimited number of independent surgeons serving in the Red Cross, the only thing in the way being a lack of funds for the support and transportation of the surgeons and for the needed supplies. The Duchess de Talleyrand (formerly Miss Anna Gould) some days ago asked for four American surgeons, offering to supply them with free tickets to France if they would volunteer for Red Cross work. Nurses are also urgently needed. The Red Cross, which sailed from New York two weeks ago with ten surgical units to be distributed among the several nations at war, has arrived on the other side, and the surgeons and nurses have been sent to their designated stations.

Council on Pharmacy and Chemistry. Since July 1 the following articles have been accepted for inclusion in New and Nonofficial Remedies: Cymarin, tablets cymarin, ampoules cymarin solution, The Bayer Co., Inc.; maltine malt soup extract, Maltine Co.; hypodermic tablets of emetine hydrochlorid, typho-serobacterin Mulford, immunizing, H. K. Mulford Co.; typhoid combined vaccine (prophylactic), Schieffelin and Co.; bacillus pertussis vaccine, meningococcus vaccine curative, meningococcus vaccine immunizing, smallpox (variola) vaccine (glycerinated), typhoid vaccine curative, typhoid vaccine immunizing, E. R. Squibb and Sons; hepco flour, hepco dodgers, hepco grits, Waukesha Health Products Co. At the request of the manufacturer, Comar and Cie, Paris, the Council has recognized E. Fougera and Co., New York, as the American selling agents for electrargol. Also in view of information received from Comar and Cie it has modified the New and Nonofficial Remedies description for electrargol to indicate that this product now contains the equivalent of .4 per cent. of metallic silver.

The Value of Research in the Development of National Health was the title of the address of Benjámin Moore, president of the Physiological Section, of the British Association for the Advancement of Science, Australia, 1914. The following is the first part as printed in *The Popular Science Monthly* for this month: The history of medical science presents to the curious student a remarkable development commencing in the latter half of the nineteenth century, and one worthy of special study, both on account of the light that it sheds on the present position and the illumination it affords for future progress. If any textbook of medicine or treatise on any branch of medical science written before 1850 be taken up at random its pages will reveal that it differs but little from one written a full century earlier. If such a volume be compared with one written thirty-five years later, it will be found that the whole outlook and aspect of medicine have changed within a generation. Erroneous introspective dreams as to the nature of diseases as "idiopathic" as the many strange maladies which their authors are so fond of describing have been replaced by fast-proven facts and medicine has passed from an occult craft into an exact science based upon experimental inquiry and logical deduction from observation. What caused this rapid spring of growth after the long latent period of centuries, and are we now reaching the end of the new era in medicine, or do fresh discoveries still await the patient experimentalist with a trained imagination who knows both how to dream and how to test his dreams?

BULLETIN EXCERPTS.

Monthly, Bucks.

1914 State Medical Meeting. Your president, Dr. LeCompte, the president of the wideawake N. P. C. S., Dr. Brown, both assistant editors of this journal, and your editor attended the great Pittsburgh meeting. We have attended many meetings of the state society, and we can class this as one of the best we have ever attended. Everything that could be done was done for our comfort, pleasure and instruction, for all of which we extend our thanks to the medical men of the Allegheny County Medical Society.

. . . .

The change of the time for beginning the payment of state dues from September 1 of each year to January 1, made it necessary for the Board of Trustees to provide for the expenses of the state society from September 1, 1914, to January 1, 1915. It therefore ordered that the next period for which dues should be collected by the state society should include the time from September 1, 1914, to January 1, 1916, a period of sixteen months. The assessment for each member for this period was fixed at $2.75. It was calculated this amount from each individual known to be a member in good standing on September 1, 1914, would provide sufficient money to meet the demands of the Defense and Benevolence Funds, the cost of the Journal, salaries of officers, expenses of committees and all other proper expenses of the state society. Although this assessment against each member under the new constitution is not payable until the period beginning January 1, 1915, yet the financial necessities of the state society make it necessary that enough should be paid before January 1, 1915, to meet the current expenses. All loyal members should therefore feel it a duty as well as a privilege to pay this assessment into their county society before January 1, 1915, so that it may be promptly forwarded to the state secretary and by him transmitted to the state treasurer.

. . . .

Finally, brethren, Bucks at last is on the state society roster, your humble servant was elected Alternate at Large (or small) to the American Medical Association, which meets at San Francisco, 1915. Our membership in the state society dates from its organization, 1848, and until now it has not held an official position in the state society. For this reason your delegate proposed the name of Walter H. Brown, M.D., for trustee, but apparently the House thought we had not served long enough in the society to be entitled to representation on this Board. Dr. Brown received a good vote, but not enough to carry him over the line. By this action the loss is not to Dr. Brown, but to the Medical Society of the State of Pennsylvania. It was a great and good meeting. J. B. C.

Medical Reporter, Chester.

We Don't Know whether it is always hot in Pittsburgh or not, but the most vivid impression carried away with us from the last two meetings of the state medical society held there is that of the awful, prostrating heat. Doctors in crowds, in meetings, in committees and in groups sweltered by day and by night during the four days of the meeting. If we could change the time of meeting to the latter part of October it would conduce greatly to the physical comfort and to the enjoyment of the good things—scientific, social and gastronomic—that are set before us on these occasions.

By the foregoing remarks we wish definitely to be understood as starting a propaganda to change the time of meeting to a cooler place or a cooler time of year. Notwithstanding this distressing condition the meeting at Pittsburgh was a good one. The scientific and business proceedings will be published in full in the Journal, when our members can judge for themselves as to the character of the meeting. In our judgment it was fully up to the high standard of recent years. Three members constituted the representation from Chester County and felt repaid for the expenditure of time and money. But it was hot.

Two matters came up in the House of Delegates that were of unusual interest. The first of these concerned the fact that the House is becoming unwieldy from its size. In the new constitution it was proposed that presidents of county societies should continue to be, as at present; *ex-officio* members of the House of Delegates, but that the representation should be one delegate to every one hundred and fifty members instead of one to every one hundred as at present. This would diminish the representation from the cities as compared with the country. By a very prompt and adroit movement a resolution was passed keeping the representation one to one hundred but eliminating presidents of county societies as *ex-officio* delegates. This will diminish the representation from the country as compared with the cities.

The other change affects the status of our members as regards the benefits of the Medical Defense and Medical Benevolence funds. County societies may make what arrangements they please with regard to the suspension of members for nonpayment of dues but no one whose dues to the state society are unpaid on March 31st is considered a member of the state society or entitled to the benefits of these funds until these dues are paid. It will be seen by this arrangement that the relation of the state society is with the individual member directly and not with the county society as a whole as heretofore.

Mirror, Fayette.

State Society Meeting. What's the matter with Fayette County? There was a very small representation present at the state meeting, and only those present know the good things the absent ones missed. Owing to the close proximity of the place of meeting to our county, we had anticipated a large turn-out, judging from the way the members have been attending our local meetings and the interest manifested. The Pittsburgh meeting was certainly a good one and the live doctors from all over the state were there. If the really big fellows, as we are prone to look upon the successful city man, can lay aside his work and journey to these meetings, and give to us of his learning, and absorb something for himself, it is to be regretted that we, who have only too few such opportunities can not take advantage of them when they are next door to us,—can not get the dust off our shoulders—can not get out of the rut up onto the good solid macadam where the going is good. It is lamentable.

Aside from the good things to be learned from the papers that are read, the rubbing elbows with men whom we consider leaders in our profession is an inspiration and we return to our daily routine better physicians mentally and physically to administer to those few patients whom we thought might get into the hands of some conferee while we were gone. Do not let another such an opportunity to brighten upon the things that are new when it is within our grasp, slip by.

Model Constitution for County Societies. At the meeting of the state society a new constitution was submitted and with it a model constitution and by-laws for the component county societies. We have compared it with the revised constitution and by-laws submitted at our last meeting and there is so very little difference that we believe with a few minor changes adapted to our own needs, it would be well for us to adopt the constitution and by-laws drafted by the committee of the state society, as a model. It coincides with the constitution of the state society as submitted and will prevent friction in the future if we adopt it now. There are very few changes from the old constitution and by-laws. The most important having to do with changes in requirements for memberships, in providing in addition to the requirements of the old constitution, or who shall give or receive a commission for referring a patient, or who shall divide a fee for medical advice or surgical treatment unbeknown to the patient or his next friend, or who shall engage in lodge practice in which he agrees to treat families or individuals for a stated period of time for a given sum, shall be disqualified from becoming or remaining a member of this society.

Bulletin, Lancaster.

Editorial. The attention of our members is called to certain changes made in the constitution of the state society by the House of Delegates at the Pittsburgh meeting, as important and intimately affecting our local society. These changes affect the representation in the House of Delegates and the status of our members in regard to the benefits accruing from the state society.

In the first place the presidents of the county societies, with the secretaries as alternates, are no longer *ex-officio* members of the House, although the ratio of delegates—one to every hundred members or fraction thereof—remains. Membership in the state society is limited to those members of county societies, who have paid their yearly dues, and such members only are entitled to the aid of the Medical Defense and Benevolent Funds. The anomalous condition may readily exist where a man may be a member of his county society in good standing and yet not a member of the state society. Of course the moral is, "Pay your dues on January first." No one practicing medicine is safe from a malpractice suit nor can one tell when he is threatened and to have the defense of the state society, it is necessary for the defendant to be a member of the state society in good standing at the time of the alleged defense.

The fiscal year of the state society has been changed to correspond to the calendar year. This involves this year a *per capita* tax to cover sixteen months, or from September 1, 1914, to January, 1916. To provide for the expenses, the Trustees were compelled to raise the *per capita* assessment from $2.00 to $2.75. This is to be paid not in bulk from the society treasury as heretofore, but is to be deducted from the individual dues and forwarded with duplicate receipts promptly upon payment by the individual members. T. B. A.

Weekly Roster, Philadelphia.

Specialties at State Society Meeting.

The transactions of the Section on Specialties of the Medical Society of Pennsylvania at its recent meeting in Pittsburgh had some notable features. Most prominent among these features was the address of the chairman, Dr. Howard F. Hansell of Philadelphia. Happily, he departed from the usual type of address which devotes itself to a review or survey of the year's progress in this particular department of medicine. Instead of this restatement of facts which are more or less known to all the interested members of this section, Dr. Hansell related his experiences in Bucharest, Roumania, the past summer in the great eye hospital that is under the direction of Professor G. Stanculeanu. The methods in vogue there were carefully dwelt on and then Dr. Hansell went into a detailed description of the new method of extracting cataract in its capsule as practiced by Prof. Stanculeanu. As is well known, this comparatively new method of extraction of a cataractous lens in its capsule has been a storm center of discussion among ophthalmic surgeons for five or six years past. The method was first seriously advocated by Colonel Smith of Amritsar, India, as a routine procedure, his argument being that the *fons et origo* of all postoperative complications in cataract operations was due to the retained lacerated capsule of the lens within the eye after the cataract had been removed. His experience with 20,000 cases gave him a favorable hearing and induced a number of American ophthalmic surgeons to visit his hospital in India. Since their return the arguments of the protagonists and antagonists have filled the columns of the ophthalmic press. The chief argument brought forth against Col. Smith's method is the amount of force needed to deliver the lens intact in its capsule through the corneal wound. Loss of vitreous humor occurs in a goodly percentage of cases and so formidable a complication is not to be lightly regarded. Now comes Professor Stanculeanu with a new idea—namely to seize the capsule of the cataractous lens with a specially devised forceps with which the lens is by a slight jerking movement dislodged from the fossa in which it normally rests and then the capsule and its contained lens are easily delivered entire through the corneal wound. Professor Stanculeanu has done several hundred cataract operations by this method and is persuaded that it is the operation of choice as a routine measure It is claimed that there is not nearly the likelihood of vitreous loss by this method as accompanies Col. Smith's method and the final visual result is held to be particularly good. Since his return Dr. Hansell has operated on several cataract cases by Stanculeanu's method and feels that it has much to recommend it. Our own feeling is that like the Smith method it will prove to be the operation of choice in incipient cataract but that in ordinary senile cataract the present von Graefe procedure is the safest one in the average operator's hands.

The rest of the afternoon of the first day was occupied in the presentation of clinical cases by the Pittsburgh members who had a fine array of material on which to base the discussion which followed. This phase of the program, which was a reproduction of what was first tried here at the Philadelphia meeting last fall, deserves to be warmly encouraged. It offers a wide field and an opportunity for many men to partake in the program in one afternoon.

The program of the second day was opened by Dr. Joseph C. Beck of Chicago (by invitation) whose address on "Borderline Problems in Ophthalmology and Oto-Laryngology" was a splendidly practical evolution of the idea that the day is near at hand when the surgeon will specialize in eye, ear, nose, throat and cranial conditions so that he may realize the ideal set forth by the late Hermann Knapp, who hoped that his son would not be a narrow-minded specialist but a "head" surgeon equipped to meet all the conditions that might arise in the whole cranial sphere, including all the special senses excepting that of the touch sense. On the same afternoon Dr. William Campbell Posey as chairman of the commission presented the report of the Commission on the Conservation of Vision. He traced the work done during the year in combating ophthalmia neonatorum, a phase of the work of the commission which had been delegated to Dr. Thomas Holloway. Dr. Posey pointed out that a volunteer corps of about 150 ophthalmologists from all over the state had been organized and stood ready to coöperate with the State Health Department in fighting this sociologic disease. The work on trachoma under the direction of Dr. Clarence Franklin was more than favorably mentioned. The work in the public schools under the direction of Dr. Wendell Reber for the year showed that slips of instruction had been printed cautioning the pupil about the necessity of good light, how to hold the book—how to take ordinary care of their eyes, etc., etc. It was further reported that the Philadelphia Board of Education had had enough of such slips printed to provide that by June, 1915, one or more such slips would be posted in the front of the school books of every one of the 180,000 pupils in the public schools of Philadelphia. A paper on "Congenital Cataract and Its Surgical Management" by Dr. William Campbell Posey brought out much fruitful discussion and was followed by one on "The Indications for Operation in Strabismus" by Dr. Wendell Reber. Dr. Jobson's paper on "Trifacial Neuralgia" and its relation to nasal disorders brought Dr. Joseph Beck of Chicago to his feet with the statement that he had done intranasal operations on many such cases without any benefit whatever. He favored injection treatment with alcohol. Another speaker pointed out the difficulty of arriving at the true etiology in these cases, and dwelt on the ophthalmic, dental and neurologic factors as well as the nasal ones. Dr. Willis Manges of Philadelphia illustrated the value of the *x*-ray in the localization of foreign bodies in the eye, and Dr. Johnston of Pittsburgh interested the section with one of his characteristic crisp snappy discussions.

The feature of the third day's program was Dr. Samuel Risley's dissertation on "The Significance of Increased Tension of the Eyeball." In this communication Dr. Risley carried forward the ideas he set forth in his paper before our section last year here in Philadelphia and gave us much to ponder over. Indeed, whenever this dean of the ophthalmic profession has anything to say on the complex subject of glaucoma it is interesting to see how every member of the section is anxious not to miss a word that he has to say. It is a beautiful tribute to one who has labored for over forty years in this field without ceasing and who has kept himself ever young not only in the knowledge of our science but in the spirit which giveth life to all things.

The papers of Dr. McMurray on "Carcinoma of the Tonsil," and Dr. McAllister on "Foreign Bodies in the Eyeball and Orbit" were welcome in that they reflected the splendid character of the work being done by the men in the interior of the state. More space on the program might well be allotted to the men all over the state.

The chairman, Dr. Hansell, was beautifully impartial in all his rulings and direction of the proceedings of the section and to him and the hard working, earnest secretary, Dr. C. M. Harris of Johnstown, all praise is due for the splendid array of material that was offered.

The one fly in the ointment was that four distinguished readers of papers did not appear to answer to their names when they had been reached on the program. This is becoming a serious matter and the executive committee of the section has felt compelled to adopt the ruling that "any member who does not appear in person to deliver his paper at the time and place stated for a given meeting shall thereby forfeit any and all rights to a place on the program of the Section on Specialties at the following meeting."

REVIEWS.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (MAYO CLINIC) for 1913. Octavo of 819 pages, 335 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.50 net.

This volume continues the system, begun by the Mayos several years ago, of collecting into a single volume the numerous papers read during the year by themselves or members of their staff. These papers can fairly be considered to represent the highest type of current American literature, and they cover such a wide range of topics that there can be scarcely any practicing physician who will not find these volumes very interesting and instructive additions to his library.

There are twenty-eight contributors to the present volume and seventy-eight papers divided under the following general headings: Alimentary Canal; Urogenital Organs; Ductless Glands; Head, Trunk, and Extremities; Technic; General Papers. J.M.W.

MANUAL OF OBSTETRICS. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. 12mo of 463 pages, 171 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $2.25 net.

The experience and recognized good judgment of the author of this manual make further introduction unnecessary. The general practitioner and the medical student will find here, in a concise form, all that is essential for the modern scientific care of the pregnant and parturient woman. The older practitioner, who from long experience may possibly have become careless, should read this work before attending his next case. The young man, with a good theoretical knowledge but very little practical experience, will gain confidence by reading some of the pages and glancing at the illustrations before visiting his pregnant patient. If the clean-cut practical advice given on the various pages be faithfully carried out by the attending physician, it will be well for him and still better for his patient. The obstetrician who has frequent occasion to consult a more elaborate work on obstetrics will in most cases have gained a knowledge and technic sufficient to enable him to handle the more unusual complications not treated in this manual. S.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume III., Numbers 2, 3 and 4. Octavo of 213 pages, 55 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published Bimonthly. Price per year: Paper, $8.00; cloth, $12.00.

It seems to us that more and more thought is being devoted to Murphy's already valuable clinics either by the author or Dr. Murphy himself, so that many of the clinical talks published in these volumes are practically as complete monographs as the general practitioner needs.

The subjects treated in the numbers that have recently come to hand are: Clinical talks on surgical and general diagnosis, ectopia testis, cholelithiasis, acute pancreatic cyst, duodenal ulcer, dilated stomach, goiter, tuberculosis of kidney, vesical papillomata, amputation neuroma with ascending neuritis, neuroma of the ulnar nerve, internal hemorrhoids, tenoplasty, bony ankylosis between ulna and humerus, nailing of fracture of surgical neck of humerus, fracture-dislocation (subcoracoid) of head of humerus, compound fracture of lower third of femur, carcinoma of right hip, carcinoma of male breast, osteoma of the head of the fibula, penetrating ulcer, sarcoma of the ovary, ankylosis of the jaw, arthroplasty of hip, ascending root neuritis, malignant papillomatous cyst of the breast, paralytic ileus from cryptogenic peritonitis, old ununited Colles' fracture, left facial nerve paralysis, paralysis of the right facial nerve the result of a basal skull fracture, intrauterine fibreid, Paget's cancer, carcinoma of the rectum with ulceration, sarcoma of humerus, cerebellar tumor, congenital luxation of the patella, recurrent luxation of the left patella, postoperative ventral hernia following appendiceal abscess.

J. M. W.

OFFICIAL TRANSACTIONS.

MINUTES OF THE PROCEEDINGS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, AT THE SIXTY-FOURTH ANNUAL SESSION, HELD IN PITTSBURGH, SEPTEMBER 21, 22, 23, and 24, 1914.

MINUTES OF THE HOUSE OF DELEGATES.

MONDAY EVENING, SEPTEMBER 21, 1914.

The House of Delegates of the Medical Society of the State of Pennsylvania was called to order in the Lecture Room, Carnegie Institute, Pittsburgh, at 8:15 P.M., Monday, September 21, 1914, by the President, Dr. Edward B. Heckel, Pittsburgh.

In accordance with precedent, the Committee on Arrangements presented a program, to become, upon approval, the order of business of the House. On motion the program was made the order of business of the House.

The Committee on Credentials made a preliminary report and roll call showed eighty members present. (See succeeding pages.)

The President announced the following committees:—

Committee on Credentials.—Drs. Ellis S. Montgomery, Pittsburgh; William A. Womer, New Castle; Harry F. McDowell, Franklin.

Reference Committee on Reports of Officers and Committees.—Drs. F. A. Fetherolf, Allentown; Frank S. Ullom, Waynesburg; Albert T. Rutledge, Blairsville.

Reference Committee on Scientific Business.—Drs. Adolph Koenig, Pittsburgh; Benton E. Longwell, Johnstown; Levi J. Hammond, Philadelphia.

Reference Committee on New Business.—Drs. Delbert Barney, Wilkes-Barre; John W. Boyce, Pittsburgh; Wilmer Krusen, Philadelphia.

Dr. Thomas D. Davis, Pittsburgh, Chairman of the Board of Trustees, announced the appointment by the Board of Trustees of the Auditing Committee, consisting of Drs. William T. Sharpless, West Chester; T. B. Appel, Lancaster, and W. Albert Nason, Roaring Spring.

The Report of the Secretary having been printed as given below was on motion referred to the Reference Committee on Reports of Officers and Committees.

Report of the Secretary.

To the President and the House of Delegates:—

The membership of the sixty-three component county societies as given in our report of last year under date of September 15, 1913, was 6044. Our membership on September 8, 1914, was 6543 making a net gain during the year of 499, as against 271 for 1913, 239 for 1912, 177 for 1911, 165 for 1910, 202 for 1909 and 161 for 1908. There have been 75 deaths during the year, as against 63 for 1913, 85 for 1912, 77 for 1911, 66 for 1910; 17 removals from county or state, as against 15 for 1913, 26 for 1912, 21 for 1911, 25 for 1910; 22 resignations, as against 18 for 1913, 19 for 1912, 36 for 1911, 31 for 1910; 203 suspensions, as against 136 for 1913, 98 for 1912, 116 for 1911, 160 for 1910.

The following societies show net gains during the year: Philadelphia, 180; Allegheny, 179; Westmoreland, 28; Fayette, 19; Montgomery, 16; Butler, Lehigh and Northampton, 11; Franklin and Northumberland, 9; Beaver, Berks, Blair, Clearfield and Schuylkill, 7; Indiana, 6; Jefferson, Mc-

Kean, Perry, Washington and York, 5; Bradford, Cambria, Carbon, Columbia and Delaware, 4; Chester, Cumberland, Elk, Lawrence and Lebanon, 3; Crawford, Lancaster, Mercer, Somerset, Union and Venango, 2; Adams, Bedford, Huntingdon, Juniata, Snyder and Wyoming, 1 each.

The following societies show a loss in membership: Lackawanna, 55; Greene, 5; Armstrong, Bucks, and Luzerne, 4; Clarion, Lycoming, Monroe and Potter, 3; Center, Mifflin, Montour, Susquehanna, Warren and Wayne, 2; Dauphin, 1.

Probably fifty of the members suspended will pay their dues and again become members, some of the others have retired, some have become disaffected, but the larger part are going downwards through dissipation. Of the 320 suspended during this summer 145 have already been reinstated.

The larger net increase of members during the year is due to the work of the organizers representing the American Medical Association. It is unfortunate that in some counties the work of the organizers was not more actively followed up by the officers and members of the local societies. For instance, one society of less than sixty members (located in a section of the state whose people as citizens are not surpassed) elected twelve physicians proposed by the organizers who have not qualified by the payment of their dues. Something is wrong somewhere with the activities of that society, but that is only one of our sixty-three societies, none of which are living up to their full possibilities.

There is one feature of the proposed new constitution that probably has been overlooked by nearly all our members. An examination of the Changes to Membership of County Societies, as printed in the Journal during the past year, will show that there were 43 members suspended ("no longer members") last summer who have since paid their dues to their county societies and been reported as "new members." Our society received no per capita assessment for these members and therefore lost eighty-six dollars through their not being in good standing on August 31. We now have 6 members who were not assessable on August 31, 1913, having taken transfer cards from their county societies but not yet having been received by other societies, and here is another loss of twelve dollars. Again, in addition to the above-mentioned, there were reported 41 new members last October, 76 in November, 49 in December, 74 in January, 143 in February, 176 in March, 37 in April, 49 in May, 64 in June, 43 in July and 40 in August; a total of 792. The state society has received nothing from these members each of whom has received the Journal and all the other rights of the society. Had the county societies sent in the per capita assessment with each name when reported, as they will have to do for future new members if the proposed constitution is adopted, our society would have received the sum of $1584; that is, our present method of collecting assessments has resulted in a loss to the state society during the past year of $1682.

C. L. Stevens, Secretary.

The Report of the Treasurer having been printed was referred to the Auditing Committee appointed by the Trustees, as required by Ordinances, and was as follows:—

Report of the Treasurer.

To the President and the House of Delegates:—

I have the honor to submit, herewith, my report as Treasurer for the fiscal year ending August 31, 1914.

RECEIPTS.

1913.	
Sept. 11, to cash, balance on hand	$2630.14
Oct. 7, to cash, dues from Huntingdon County	74.00
Oct. 7, to cash, dues from York County	192.00
Oct. 7, to cash, dues from Butler County	92.00
Oct. 8, to cash, dues from Northumberland Co.	96.00
Oct. 9, to cash, dues from Clarion County	72.00
Oct. 9, to cash, dues from Adams County	36.00
Oct. 9, to cash, dues from Dauphin County	272.00
Oct. 9, to cash, dues from Lancaster County	290.00
Oct. 9, to cash, dues from Allegheny County	1704.00
Oct. 10, to cash, dues from McKean County	100.00
Oct. 10, to cash, dues from Potter County	48.00
Oct. 10, to cash, dues from Wayne County	62.00
Oct. 10, to cash, dues from Westmoreland County	244.00
Oct. 14, to cash, dues from Erie County	192.00
Oct. 17, to cash, dues from Philadelphia Co.	2930.00
Oct. 17, to cash, dues from Montgomery County	194.00
Oct. 17, to cash, dues from Carbon County	60.00
Oct. 21, to cash, dues from Fayette County	204.00
Oct. 22, to cash, dues from Lehigh County	150.00
Nov. 1, to cash, dues from Sullivan County	18.00
Nov. 5, to cash, dues from Venango County	106.00
Nov. 8, to cash, dues from Armstrong County	130.00
Nov. 20, to cash, dues from Luzerne County	414.00
Nov. 25, to cash, dues from Chester County	134.00
Dec. 1, to cash, dues from Northampton County	220.00
Dec. 3, to cash, dues from Jefferson County	128.00
Dec. 15, to cash, dues from Center County	62.00
Dec. 30, to cash, dues from Greene County	58.00
1914.	
Jan. 8, to cash, dues from Tioga County	64.00
Jan. 10, to cash, dues from Lycoming County	208.00
Jan. 12, to cash, dues from Mifflin County	66.00
Jan. 12, to cash, dues from Perry County	36.00
Jan. 16, to cash, dues from Wyoming County	38.00
Jan. 16, to cash, dues from Berks County	206.00
Jan. 30, to cash, dues from Cumberland County	84.00
Feb. 2, to cash, dues from Union County	30.00
Feb. 21, to cash, dues from Cambria County	196.00
Feb. 27, to cash, dues from Bucks County	172.00
Mar. 7, to cash, dues from Mercer County	142.00
Mar. 10, to cash, dues from Clinton County	44.00
Mar. 16, to cash, dues from Bradford County	86.00
Mar. 17, to cash, dues from Clearfield County	94.00
Apr. 30, to cash, dues from Blair County	170.00
May 16, to cash, dues from Somerset County	72.00
June 13, to cash, dues from Columbia County	80.00
June 18, to cash, dues from Warren County	106.00
June 22, to cash, dues from Lackawanna County	394.00
June 23, to cash, dues from Montour County	36.00
June 26, to cash, dues from Washington County	252.00
July 7, to cash, dues from Elk County	52.00
July 17, to cash, dues from Bedford County	50.00
July 20, to cash, dues from Franklin County	112.00
July 29, to cash, received from Philadelphia Co., Organization Work, A. M. A.	18.00
Aug. 4, to cash, dues from Beaver County	118.00
Aug. 5, to cash, dues from Lawrence County	114.00
Aug. 7, to cash, dues from Juniata County	20.00
Aug. 7, to cash, dues from Monroe County	64.00
Aug. 18, to cash, dues from Crawford County	92.00
Aug. 19, to cash, dues from Indiana County	88.00
Aug. 20, to cash, dues from Delaware County	156.00
Aug. 20, to cash, dues from Lebanon County	54.00
Aug. 22, to cash, dues from Snyder County	32.00
Aug. 22, to cash, dues from Susquehanna County	46.00
Aug. 29, to cash, dues from Schuylkill County	164.00
Sept. 5, to cash, received from Medical Defense Fund in payment of Vouchers Nos. 9, 18, 25, 35, 44, 48, 49, 64, 73, 74, 82, 84, 92, 93, 95, 103 and 104, drawn from the general fund	2164.76
Total	$16,832.90

EXPENDITURES.

Order No.	1913.	
1.	Oct. 3, by cash, Henry D. Jump, Committee on Regulation of Membership	$ 9.25
2.	Oct. 3, by cash, George G. Harman, exp., Councilor of 4th District	6.65
3.	Oct. 3, by cash, J. B. Maney, P.M., stamped envelopes	21.30
4.	Oct. 3, by cash, F. L. VanSickle, expenses, Councilor of 6th District	28.00
5.	Oct. 3, by cash, John B. Love, organization work	6.00
6.	Oct. 3, by cash, F. V. Cargill, organization work	9.00
7.	Oct. 3, by cash, Chas. A. Brown, organization work	1.00
8.	Oct. 3, by cash, James D. Heard, Committee on Defense Medical Research	2.55
9.	Oct. 3, by cash, Wm. L. Estes, medical defense Case No. 32	2.51
10.	Oct. 3, by cash, Wm. L. Estes, exp., Delegate Council Med. Education and Legislation	64.15

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LIBRARY

11. Oct. 7, by cash, Murrelle Printing Co., printing reports	49.52
12. Oct. 7, by cash, W. G. Jordan, programs and reports	163.21
13. Oct. 7, by cash, Frank G. Hartman, Com. on Public Policy and Legislation	309.50
14. Oct. 7, by cash, W. C. Posey, Com. on Conservation of Vision	353.18
15. Oct. 7, by cash, Wm. S. Wray, Secretaries' Conference	75.00
16. Oct. 7, by cash, C. L. Stevens, entertainment, invited guest	6.00
17. Oct. 21, by cash, Anneg & Unger, reporting Philadelphia Session	64.50
18. Oct. 21, by cash, Henry C. Niles, med. defense Case No. 41	100.00
19. Oct. 21, by cash, Athens Gazette, programs and reports	66.33
20. Oct. 21, by cash, C. L. Stevens, Jour. for Oct.	508.33
21. Oct. 21, by cash, Bessie L. Brown, exp., registration office, Philadelphia	32.08
22. Oct. 21, by cash, Agnace McCarthy, exp., registration office, Philadelphia	35.35
23. Oct. 21, by cash, John C. Ingham, retainer fee	100.00
24. Oct. 28, by cash, Legal Pub. Co., stationery	9.50
25. Oct. 28, by cash, Burleigh & Challener, med. defense, Case No. 21	8.80
26. Oct. 28, by cash, John B. Love, organization work	18.00
27. Oct. 28, by cash, Chas. A. Brown, organization work	8.00
28. Oct. 28, by cash, F. V. Cargill, organization work	2.00
29. Oct. 28, by cash, A. C. Besse, organization work	1.00
30. Oct. 28, by cash, C. M. MacDonald, organization work	2.00
31. Nov. 3, by cash, J. B. Maney, P.M., stamped envelopes	85.12
32. Nov. 3, by cash, Mrs. M.C. Repp, reporting Surgical Section	100.00
33. Nov. 3, by cash, C.L. Stevens, Jour. for Nov.	508.33
34. Nov. 25, by cash, R. R. Benedict, bond of Treasurer	7.50
35. Nov. 25, by cash, Burleigh and Challener, Medical Defense Fund	100.00
36. Nov. 25, by cash, L. C. Alexander, reporting Philadelphia Session	100.00
37. Nov. 25, by cash, Lulu Gay, reporting Philadelphia Session	100.00
38. Dec. 3, by cash, G. W. Wagoner, Treasurer's account book	23.45
39. Dec. 3, by cash, G. W. Wagoner, sal. as Treas.	50.00
40. Dec. 3, by cash, Wm. H. Cameron, salary as Assistant Secretary	62.50
41. Dec. 3, by cash, C. L. Stevens, salary as Sec.	250.00
42. Dec. 3, by cash, C.L. Stevens, Jour. for Dec.	508.33
43. Dec. 30, by cash, G. W. Wagoner, special funds, for investment	1606.80
44. Dec. 30, by cash, N. H. Larzelere, med.defense, Case No. 16	250.00
45. Dec. 30, by cash, Wm.G. Jordan, printing and stationery	54.32
46. Dec. 30, by cash, C.L. Stevens, Jour. for Jan. 1914.	508.33
47. Jan. 22, by cash, L. B. Kline, Com. on Medical Advertising	1.50
48. Jan. 22, by cash, James Johnston, medical defense, Putnam Case	20.00
49. Jan. 22, by cash, Wm. A. McConnell, medical defense, Allen Case	50.00
50. Jan. 31, by cash, Chas. A. Brown, organization work	21.00
51. Jan. 31, by cash, C.L. Stevens, Jour. for Feb.	508.33
52. Feb. 10, by cash, T. D. Carson, Philadelphia Session	2.00
53. Feb. 10, by cash, J. B. Maney, P.M., stamped envelopes	11.00
54. Mar. 3, by cash, I. Sloan, organization work	1.00
55. Mar. 3, by cash, A.C.Besse, organization work	17.00
56. Mar. 3, by cash, Franklin L. Young, organization work	8.00
57. Mar. 3, by cash, L. S. Trusler, org. work	18.00
58. Mar. 3, by cash, J. B. Love, org. work	43.00
59. Mar. 3, by cash, F. N. Standbridge, org. work	29.00
60. Mar. 3, by cash, F. V. Cargill, org. work	13.00
61. Mar. 3, by cash, C. A. Brown, org. work	3.00
62. Mar. 3, by cash, L.P. VanDuzer, org. work	30.00
63. Mar. 3, by cash, American Med.Ass'n.,org.work	5.00
64. Mar. 3, by cash, Niles and Neff, medical defense, Case No. 41	200.00
65. Mar. 3, by cash, Legal Pub. Co., postal cards	3.00
66. Mar. 3, by cash, C.M.Harris, Com.on Sci.Work	16.20
67 Mar. 3, by cash, C.L. Stevens, Jour. for March	508.33
68. Mar. 3, by cash, C.L. Stevens, com. meetings.	23.47
69. Mar. 3, by cash, G.W.Wagoner,salary as Treas.	50.00
70. Mar. 3, by cash, W.H. Cameron, salary as Assistant Secretary	62.50
71. Mar. 3, by cash, C.L. Stevens, salary as Sec.	250.00
72. Mar. 20, by cash, W. H. Cameron, Com. on Scientific Work	27.00
73. Mar. 20, by cash, Houck & Benjamin, med. defense, Case No. 14	100.00
74. Mar. 20, by cash, A. H. Woodward, medical defense, Case No. 55	20.00
75. Mar. 20, by cash, J.M. Wainwright, Commission on Cancer	63.90
76. Mar. 20, by cash, W.G. Jordan, printing, stationery and postage	136.91
77. Apr. 8, by cash, F.H. Gerlock and Co., Commission on Cancer	15.25
78. Apr. 8, by cash, James I. Johnston, Commission on Cancer	20.00
79. Apr. 8, by cash, E. A. Weiss, Com. on Cancer	20.00
80. Apr. 8, by cash, J.M. Wainwright, Commission on Cancer	8.00
81. Apr. 8,by cash,Donald Guthrie, Com.on Cancer	8.00
82. Apr. 8, by cash, John McGahren, medical defense, Case No. 53	250.00
83. Apr. 8, by cash, C.L. Stevens, Jour. for April	508.33
84. May 5, by cash, Burleigh and Challener, medical defense fund, Cases Nos. 29 and 37	285.45
85. May 5, by cash, C. L. Stevens, Jour. for May	508.33
86. May 29, by cash, Theodore B. Appel, Coun.exp.	3.80
87. May 29, by cash, W.H. Cameron, advance exp., Pittsburgh Session	250.00
88. May 29, by cash, C.L. Stevens, salary as Sec.	250.00
89. May 29, by cash, W.H. Cameron, salary as Assistant Secretary	62.25
90. May 29, by cash, G.W. Wagoner, sal. as Treas.	50.00
91. May 29, by cash, C.L. Stevens, Jour. for June	508.33
92. June 30, by cash, George B. Moore, medical defense, Case No. 35	3.00
93. June 30, by cash, Burleigh and Challener, med. defense, Case No. 35	350.00
94. July 3, by cash, J.T. Rugh, Com. on Sci.Work	19.00
95. July 3, by cash, Thomas Cope, medical defense, Case No. 42	175.00
96. July 3, by cash, C.L. Stevens, Jour. for July	508.33
97. July 6, by cash, J. M. Wainwright, Commission on Cancer	69.75
98. July 6, by cash, F. N. Standbridge, org. work	32.00
99. July 6, by cash, C. A. Brown, org. work	7.00
100. July 6, by cash, L. P. VanDuzer, org. work	24.00
101. July 6, by cash, F. V. Cargill, org. work	6.00
102. July 6, by cash, L. S. Trusler, org. work	13.00
103. July 17, by cash, Burleigh and Challener, med. defense, Case No. 30	200.00
104. July 17, by cash, Wm. O. McConnell, med. defense, Case No. 52	50.00
105. July 17, by cash, Donald Guthrie, Com. on Scientific Work	21.50
106. July 25, by cash, F. Young, org. work	97.00
107. July 25, by cash, J. B. Maney, P.M., stamped envelopes	32.30
108. Aug. 5, by cash,C.L.Stevens, Jour.for August	508.33
109. Aug. 5, by cash,C.M.Harris, Com.on Sci.Work	5.08
110. Aug. 5, by cash, Henry D. Jump, Com.on Scientific Work	18.94
111. Aug. 5, by cash, American Surety Co. of New York, bond of Asst. Secretary	5.00
112. Aug. 5, by cash, A. P. Hull, Councilor exp.	7.68
113. Sept. 4, by cash, G. W. Wagoner, special funds for investment	782.00
114. Sept. 4,by cash (Charged to Medical Defense Fund).	
115. Sept. 4, by cash, G.W.Wagoner, exp.as Treas.	10.00
116. Sept. 4, by cash, C.L.Stevens, Jour. for Sept.	508.33
117. Sept. 4, by cash, C.L. Stevens, salary as Sec.	250.00
118. Sept. 4, by cash, W.H. Cameron, salary as Assistant Secretary	62.50
119. Sept. 4, by cash, G.W.Wagoner, sal. as Treas.	50.00
120. Sept. 4, by cash, Geo. E. Holtzapple, Com. on Society Comity and Policy	20.88
121. Sept. 4, by cash, Walter H. Brown, Com. on Society Comity and Policy	14.42
122. Sept. 4, by cash, C. L. Stevens, Com. on Society Comity and Policy	17.77
123. Sept. 4, by cash, J.B. McAlister, Com. on Public Policy and Legislation	20.30
124. Sept. 4, by cash, C.L. Stevens, exp. as Sec.	110.50
125. Sept.5,by cash, F.L.VanSickle, Councilor exp.	22.00
126. Sept. 5, by cash, H.W. Gass, Councilor exp.	17.15
Total	$15,406.03

SUMMARY.

Receipts:

Cash on hand at beginning of year	$ 2,630.14
Received from 63 societies, 6009 members	12,018.00
Received from overpayment by Clearfield Co. Soc.	2.00
Received from Philadelphia Co., organ. work	18.00
Received from Medical Defense Fund in payment of orders issued from General Fund	2,164.76
Total	$16,832.90

Expenditures:

Journal	$6099.96
Salaries of Secretary, Assistant Sec. and Treas.	1449.75
Med. Benevolence and Defense Funds for Invest.	2388.80

Expenses of Philadelphia Meeting	793.99
Advance Expenses of Pittsburgh Session	250.00
Expenses of Committees and Councilors	1648.87
Printing, stationery, postage, etc	497.40
Retainer fee	100.00
Bond of Treasurer	7.50
Bond for Assistant Secretary	5.00
On account of Medical Defense Fund	2164.76
Total	$15,406.03
Balance in bank	$1426.87
Amt. due special funds for invest., 81 members	32.40
Balance on hand for general expenses	$1394.47

Medical Benevolence Fund.

Investment :—	
P.R.R. General Freight Equipment Trust Certificates Nos. 531, 532, 533, 534, 535, Series 1, par value $1000.00, 4 1-2 per cent., interest payable first day of July, October, January and April	$5000.00
Wilkes-Barre City Improvement Bond No. 94, Series 1, par value $1000.00, 4 1-2 per cent., interest payable April 1st and October 1st	1000.00
Total investment for Benevolence Fund	$6000.00
Cash in bank at beginning of fiscal year	$676.83
Received from 44 members, 1912-13, at .15	6.60
Received from 5928 members, 1913-14	889.20
Received from interest on investment bonds	268.00
Received from interest on cash in bank	32.11
	$1872.74
Withdrawn for tax on investment bonds	2.00
Balance on hand	$1870.74

Medical Defense Fund.

Investment :—	
Wilkes-Barre City Improvement Bonds Nos. 96, 97, and 98, Series 1, par value $1000.00, 4 1-2 per cent., interest payable April 1st and October 1st	$3000.00
Cash in bank at beginning of fiscal year	$ 648.53
Received from 44 members, 1912-13, at .25	11.00
Received from 5928 members, 1913-14	1482.00
Received from interest on investment bonds	129.00
Received from interest on cash in bank	35.30
	$2305.83
Withdrawn for tax on investment funds	$ 6.00
Withdrawn by Order No. 114 to cover Orders Nos. 9, 18, 25, 35, 44, 48, 49, 64, 73, 74, 82, 84, 92, 93, 95, 103, and 104, drawn from General Fund	2164.76
	$2170.76
Balance on hand	$135.07

County societies and the membership August 31, 1913:

Adams	18	Lancaster	145
Allegheny	852	Lawrence	57
Armstrong	65	Lebanon	27
Beaver	59	Lebigh	75
Bedford	25	Luzerne	207
Berks	103	Lycoming	104
Blair	85	McKean	50
Bradford	43	Mercer	71
Bucks	86	Mifflin	33
Butler	46	Monroe	32
Cambria	98	Montgomery	97
Carbon	30	Montour	18
Center	31	Northampton	110
Chester	67	Northumberland	48
Clarion	36	Perry	18
Clearfield	46	Philadelphia	1465
Clinton	22	Potter	24
Columbia	40	Schuylkill	82
Crawford	46	Snyder	16
Cumberland	42	Somerset	36
Dauphin	136	Sullivan	9
Delaware	78	Susquehanna	23
Elk	26	Tioga	32
Erie	96	Union	13
Fayette	102	Venango	53
Franklin	56	Warren	53
Greene	29	Washington	126
Huntingdon	37	Wayne	31
Indiana	44	Westmoreland	122
Jefferson	64	Wyoming	19
Juniata	10	York	96
Lackawanna	197		
Total membership			6007

Respectfully submitted,

G. W. Wagoner, Treasurer.

Dr. T. D. Davis presented the following report of the Board of Trustees and Judicial Council:—

Report of the Board of Trustees.

To the President and the House of Delegates:

Your Trustees respectfully report that the business transacted by them, since the last session of your honorable body, has been almost entirely of a routine character.

In order to conserve our funds and divide our money as carefully as possible a committee took under advisement at the beginning of the year the requests of the various committees and allotted to each a definite amount, warning them that they would have to be personally responsible for any money spent more than this amount. Much time has been consumed in conducting suits for alleged malpractice. These suits are proving numerous and expensive, and about five hundred dollars have been expended during the year out of the defense fund more than has been paid in during the year.

At a meeting of the Trustees in June the whole matter of the Journal was gone over very carefully for several hours, and we have entered into a contract with the present publisher for two years more at the same price. We have also arranged to take advantage of the advertising bureau of the American Medical Association and have changed the size and shape of the Journal.

A report concerning the Defense Fund will be presented at a later meeting.

The Treasurer's Report will show how all moneys have been expended.

We are greatly pleased to report that no business has come before the Judicial Council whatever.

Respectfully submitted,

Thomas D. Davis, Chairman.

Reports of Individual Councilors.

DR. WILLIAM T. SHARPLESS, WEST CHESTER, COUNCILOR FOR THE FIRST DISTRICT:

To the President and the House of Delegates:—

As Councilor of the First District of the medical society of this state, I make the following report:—

I have visited all of the county medical societies in this district during the past year. I believe good feeling generally prevails among the members, and that the societies are all doing useful work.

The Philadelphia County Society has added a great many new members. Its meetings are of great scientific interest. It is endeavoring through the public press and otherwise to give the public correct information on medical matters. It has its own medical defense fund and a fund for the care of members and their families in need of financial assistance.

There has been but little change in Delaware County. The meetings are regularly held and pretty well attended. I have the impression that the society could add to its membership and to the interest of its meetings by a little more energetic work on the part of its present members.

The Chester County Society now meets every month instead of every two months as formerly. The meetings are very good. The attendance is usually excellent, many members coming considerable distance. There are still a few good men in the county who are not members but these are constantly being urged to join. The society publishes a bulletin which, I believe, is useful to the members.

The Montgomery County Society has seen a great revival in the past two or three years, and is now a model of what such a society should be. It meets every two weeks. The membership is largely increased and is still growing. The society issues an excellent bulletin and has a considerable sum of money in the treasury to be used in purchasing a permanent home for the society.

The condition in Berks County is pretty satisfactory. The society now has, or has nearly secured, a permanent home of its own, which affords an excellent place for meeting and contains its library. It has a large membership and good meetings. I am told that there are some differences among the doctors in the county and an earnest effort should be made to overcome them. This possibly could be brought about by willingness on all sides to compromise in nonessential matters.

The Schuylkill County Society does not seem fully to realize the possibilities for usefulness which exist in that county. So far as my personal observation goes the meetings are not always well attended and the program is not always carried out on account of the failure of those appointed to read papers to perform this useful function. Much of the county is thinly settled, the distances are great and means of communication poor. This may in part account for the state of things. The society, however, has in conjunction with some similar bodies established a good library, which is catalogued and is extensively used. There are other symptoms also that a revival of interest is beginning.

DR. THEODORE B. APPEL, LANCASTER, COUNCILOR FOR THE SECOND DISTRICT:

To the President and the House of Delegates:—

I have the honor to submit herewith my report as Councilor for the Second District for the year 1914. The district comprises the Fourth and Fifth Censorial Districts, including the Counties of Lebanon, Dauphin, Lancaster, Cumberland, York, Adams, Franklin and Fulton. The seven component societies carry as members 552. From reports submitted by the various secretaries, there are in these counties about 750 licensed practitioners of whom possibly 650 are eligible to membership. Franklin reports a full quota, there being one ineligible practitioner. Lancaster with a membership of 151 reports 250 practitioners of whom 75 are classed as ineligible. Cumberland has 44 out of 75 as members and Adams 20 out of 45. York, Dauphin and Lebanon have not submitted figures. With the exception of Cumberland all the county societies meet monthly and we would suggest to the officers of that county society that more frequent meetings would increase interest. Dauphin, Lancaster, York and Franklin report libraries in more or less active use. As to the general conditions of the societies, Franklin County reports an active and successful society year; Adams reports "being alive and thankful for it"; Cumberland complains of lack of interest; Dauphin is flourishing; Lancaster "more interested than ever before." York and Lebanon have not reported but from personal knowledge we believe them to be in a very healthy condition.

The annual meeting of the Fourth Censorial District at Mt. Gretna on August 29 was attended by fifty-five members in spite of a heavy rain, and was proof of the active interest taken by the three societies in the district.

It is proper to report here the result of a suit for malpractice against a member of the York County Society, which terminated by trial in February last. The malpractice charged was claimed to be carelessness in the loss of a drainage tube in an empyema cavity. The defense was undertaken by the state society and at the trial after the evidence was in for the prosecution, the attorney for the defense was apparently willing to accept a nonsuit, but the society's representative demanded and obtained from the judge, binding instructions for an acquittal. There has so far been no appeal.

DR. WILLIAM L. ESTES, SOUTH BETHLEHEM, COUNCILOR FOR THE THIRD DISTRICT:

To the President and the House of Delegates:—

The Councilor for the Third District has little to report this year.

The county societies of the district have, with one exception, done good work during the year.

It is a matter of keen regret on the part of the Councilor that he was not able to visit some of the county societies and show by his presence at their meetings his interest and his earnest desire to assist in any way he could in maintaining the welfare and strength of the organizations.

There have been six suits continued or entered against members of the several societies of the district. Four of these suits were decided in favor of the defendants, one has never come to trial and probably never will, and one was settled out of court without consulting the Councilor.

Six suits in one district suggest that this matter of defense of members of the state society is becoming and will undoubtedly be a most important feature of the state society's work. As members begin fully to realize the importance of the cooperation of the state society in their defense, the expense to the society will undoubtedly increase. It will be necessary therefore for the society to make a larger provision for meeting these suits.

The Board of Trustees has undertaken to formulate distinct rules and suggestions in regard to these matters of defense and when the House of Delegates shall have considered and adopted these suggestions, or some other suggestions, the whole matter may be properly understood and the necessary procedures clearly defined, so that the defense of these suits may be done systematically and thoroughly and members may avail themselves early of the assistance which the state society offers them.

DR. HORATIO W. GASS, SUNBURY, COUNCILOR FOR THE FOURTH DISTRICT:

To the President and the House of Delegates:—

The following is my report for the Fourth District of the Medical Society of the State of Pennsylvania:

This district is increasing in interest and work as well as membership. One year ago four of the eight county societies held monthly meetings, now five hold monthly meetings, one bimonthly and two quarterly. Perry County has changed from quarterly to monthly meetings, which bespeaks well for them, showing their progressive spirit.

Several of the counties held unusually interesting special meetings along the lines of expert testimony; Huntingdon, Columbia and Northumberland deserving special mention. There were also a number of other special meetings addressed by prominent physicians.

During my official visits I received the most courteous treatment and found an enthusiastic, earnest lot of doctors solving their own problems along many lines of scientific medicine and surgery.

There has been but one application for aid from the Medical Defense Fund and that, I believe, will never be brought to trial.

In my official visits I have urged the members to boost the Journal and thereby the state society, to exercise great care in the remarks made about other physicians' work, consequently leaving no suggestion for malpractice suits, and have urged monthly meetings for these counties having quarterly meetings.

The following is my statistical report:—

Membership August 1, 1913	224
Membership August 1, 1914	236
Number physicians in eight counties	319
New members received	21
Members died	4
Members suspended	2
Number of meetings during year	72
Average attendance	12

DR. W. ALBERT NASON, ROARING SPRING, COUNCILOR FOR THE FIFTH DISTRICT:

To the President and the House of Delegates:—

The Councilor for the Fifth District would report a successful year. He has visited each society of the district. When requested to do so in advance, he has delivered an address, either upon some technical subject or along the line of organization matters. When not so requested, he has done the best he could to give some talk in the interest of more thorough work, and to aid the growth of the societies. The censorial meeting held in Johnstown, June 11 was a grand success, as reported in the state journal. Representatives were present from each county, and the number present far exceeded expectations. We hope to repeat the success next year, and have a meeting in Altoona. All the societies in the district have paid their assessment.

On February 1, a visit was made to Greensburg, on the Westmoreland County Society. There was the usual good attendance. Two most excellent papers were given by members, and a spirited discussion was participated in by a goodly number. It was impossible to accept their invitation this year to the annual banquet. This was a distinct loss as from past experience we know the usual splendid times they have. Westmoreland is a live society.

April 8, we visited the Clearfield County Society. The meeting being held at the hospital, a very interesting clinic was held. These clinics are features of about half of their regular meetings and are always drawing cards to induce attendance. After the clinic the exercises were held in the Nurses Home parlors. Clearfield County Society is increasing its efficiency, and part of the credit is due to their live *Bulletin*. It is always a pleasure to visit them.

We were at the meeting of the Somerset County Society, April 21, which was held in the courthouse. It was not a large meeting but made up in interest for the lack in numbers. We congratulate them on changing their by-laws and making the meetings six instead of four in the year. For some reason the Committee on Expert Testimony failed to appear so the councilor was compelled to supply an address. If the younger members could take example from the vigor of the patriarchal secretary, Somerset County would be a hummer. The facilities for getting together are not good in Somerset County.

On April 22, we were present by special invitation at the annual banquet of Center County Society. The feature of the meeting was an address by one of Philadelphia's brilliant men, and was certainly a treat. The banquet was of the kind for which Bellefonte is famous. Many outsiders were present and a warm fellowship was shown. The faithful of Center County are keeping up a good fight and the careless are gradually wakening.

On May 14 we attended the meeting of the Cambria County Society at Johnstown and presented to them the matter of a district meeting, either censorial or councilor. They promptly decided on the latter and appointed a committee in charge. The result is apparent in report in the JOURNAL of that meeting. Cambria County Society has some very excellent men and has added luster to the state society. We are proud to be in charge of a district in which is such a society. We hope to see them issue a bulletin in the near future in which to stir up the lazy ones, which they have, along with all the rest of our societies.

An official visit was made to the Fayette County Society, June 2. The meeting was held at Uniontown in the evening and was well attended. A speaker from Pittsburgh gave a fine address. It was, as is usual in Fayette County, a live meeting. We can report progress as they have revised their by-laws so as to have their meetings each month instead of every two months. We acknowledge an urgent invitation to attend their picnic meeting but we were unable to attend.

Bedford County Society still needs some missionary work though there were present a goodly number on the day of our visit. There was much interest manifest and two good meetings have been held since. There are plenty of good fellows who are live practitioners in Bedford County, and with a little systematic work in getting them together regular meetings should be held. The *Bulletin* now comes out regularly and we look for a good year.

In Blair County we have had regular meetings each month with papers or addresses, usually by members. Our annual picnic outing was held at Ebensburg. Our annual banquet was well attended and all meetings have had a goodly number present. We have met with a great loss in the death of Dr. W. S. Ross, who for so many years was our efficient treasurer. He was a good man and a great force for medical uplift. It had been our hope that some day the state society would be graced by him as its president, but he has gone to a greater reward for his labors.

DR. FREDERICK L. VAN SICKLE, OLYPHANT, COUNCILOR FOR THE SIXTH DISTRICT:

To the President and the House of Delegates:—

The report of the Councilor for the Sixth District must of necessity be short this year, as but two official visits have been made. The first of these was to Bradford County, May 12, and the second to the meeting of the Fourteenth and Sixteenth Censorial Districts, at Sayre, July 14. Both of these meetings were well attended and profitable to the profession, mention of them having been made in the JOURNAL.

From correspondence with the secretaries of the component societies of the district, I find the members of the profession are interested in society work, so far as it is possible for many of them to be, owing to remote distances from place of meeting. Most of the societies retain their normal membership and some are gaining. The attendance and interest shown at the censorial meeting would indicate activity in medical matters in the Sixth District.

DR. THOMAS D. DAVIS, PITTSBURGH, COUNCILOR FOR THE SEVENTH DISTRICT:

To the President and the House of Delegates:—

My work during the year has been almost entirely attending and giving advice concerning malpractice suits. We won four cases in Allegheny County, two by nonsuit and one by a verdict from the arbitrators and next from an appeal to the court and it is now appealed to a higher court. We nonsuited one case in Beaver County, because neither negligence nor ignorance was proven. We have entered three cases in Washington County, one in Greene County, and one in Allegheny County. In such cases much time is taken in consultation, securing proper counsel and attending the trials. We use our efforts to secure expert witnesses, etc., all of whom, I am glad to report, are willing to so serve the society without compensation. It seems very improper to have our society defend a case when some of our own members appear as witnesses for the prosecution. Personalities are most frequently the ground for such testimony.

I attended the annual meeting of the Westmoreland County Society and at the dinner at Greensburg the ladies were present also. It proved a very successful innovation.

I received no invitation to any other society, except my own Allegheny County. The trouble about visiting a society without an invitation is that its program is so full that there is not time to present the interests of the state society, nor to offer any advice on other organization subjects.

DR. JAMES JOHNSTON, BRADFORD, COUNCILOR FOR THE EIGHTH DISTRICT:

To the President and the House of Delegates:—

The year has shown steady gains in all of the counties in the northwestern part of the state. No losses have occurred in numbers of membership nor any set backs in interest or harmony. Regular meetings are held, all of the offices filled by competent and energetic men and in every county there is a working body of harmonious members who enjoy the outings and profit by the association. Three of the six counties publish bulletins and find it worth while.

In every county the best of the total profession is included in the membership and in none is there any considerable number of practitioners, desirable as members, who are not enrolled.

No new malpractice suits have been started. The single case that was carried over from last year is yet unsettled.

Partly as a result of the state-wide discussion on the subject of expert testimony the subject of fees for post-mortem examinations has come up. Many counties pay $10 as a price for a post-mortem examination made at the instance of the coroner and obtain the attendance of the physician at court and subject him to the experience of testifying as an expert witness. Some pay $15 and sometimes $20 is paid and even $25. As a matter of fact the county accepts the services of the physician tendered in accordance with the simple-minded instinct characteristic of the profession, and pays whatever the commissioners have been in the habit of paying; no more now than forty years ago. Always the amount is disproportionate to the other charges on the county and insignificant in comparison with the fees of other servants in the case.

McKean County Society has taken the lead in this matter and has agreed to make nothing less than a complete examination of all of the organs of the body in every case of legal interest, with a full written report, for which the commissioners agree to pay $75.

Crawford County Society has the smallest proportion of the whole profession enrolled. In this county there is an important section that finds itself more closely allied to another county geographically. Monthly meetings are held regularly and are attended by about a third of the membership. Efficient officers keep the activities of this society fully up to the average and its attractive *Bulletin* is well known throughout the state.

Warren County Society has had a prosperous year. Its membership deserves special mention for the quality of its scientific work, due in some measure to the medical officers of the State Hospital who are active members of this society.

In Elk County and in Potter County the societies are maintained without much change in membership or methods.

In Erie County, which includes the growing city of Erie, there is the largest membership and most activity. Just now Erie is resisting vaccination. Antivaccinationists appear to be in the majority and are resisting the board of health. The county society has endorsed the board of health in its stand on compulsory vaccination but the people are disposed to be led by a propagandist from North Tonawanda, N. Y., who has been making it his business to mislead the public in scientific matters for some time. A couple of years ago, in his home town, the writer had occasion to notice a public denunciation of typhoid vaccination by this doctor in which he recited the well-known failure of antityphoid vaccination in the British Army in South Africa and made it appear that this was the best result that had yet been attained. Dishonesty could hardly go further, yet the good people of Erie have chosen him to guide them rather than the men of their own city. That this should be true is not so exceptional that it is difficult to understand and the profession is entitled to the support and encouragement of the state society until this ill wind subsides.

The Reports of Councilors were on motion referred to the Reference Committee on Reports of Officers and Committees.

The Report of the Committee on Public Policy and Legislation as printed was on motion referred to the Reference Committee on Reports of Officers and Committees.

Report of the Committee on Public Policy and Legislation.

To the President and the House of Delegates:—

The Committee on Public Policy and Legislation has nothing of importance to report as accomplished by the committee during the year, as the state legislature has not been in session. The committee met in January for organization and to make preparations for work when the Legislature does meet. As instructed by the House of Delegates, we have appointed sub-committees in each county of the state. The Advisory Committees on Defense of Medical Research and on Promotion of Efficient Laws on Insanity have been active and will submit their reports. The Commission on Conservation of Vision has also been active.

At the coming meeting of the Legislature we must be prepared to defend the laws permitting animal experimentation which are so essential to medical progress. The committee is of opinion that at this time, rather than ask for new medical legislation we should hold to that which we have, or amend where necessary, as may be advised by the Bureau of Medical Education and Licensure.

We recommend that a sufficient sum be appropriated to conduct the work of the committee, with its advisory committees.

Very respectfully submitted,
J. B. McAlister, Chairman.
Frank G. Hartman.
George A. Knowles.
Edward B. Heckel.
C. L. Stevens.

The Report of the Committee on Society Comity and Policy as presented below was on motion referred to the Reference Committee on Reports of Officers and Committees.

Report of the Committee on Society Comity and Policy.

To the President and the House of Delegates:—

The House of Delegates at Philadelphia referred to this committee the Constitution and By-Laws, proposed as a substitute for the present Ordinances and By-Laws, and also instructed it to report a model constitution for component county societies.

The members of this committee individually considered the matter during the year and met in Allentown, August 1, all being present except Dr. Anders, who was in Europe, and devoted six hours continuously to the consideration of the proposed new constitution. Before adjournment subcommittees were appointed to consider certain items. The committee met again in Sayre, August 26, with all the members excepting Dr. Anders present, and had the benefit of the presence and assistance of President Heckel as *ex-officio* member of the committee. After four hours of careful consideration the committee was enabled unanimously to recommend the proposed substitute constitution and by-laws as printed below for adoption by the House of Delegates. Due attention was given to all communications, suggestions and criticisms regarding the proposed constitution that had reached any of the members of the committee, and also to the action taken by some county societies, as published in the reports from such societies in the Journal.

The model constitution and by-laws for county societies as printed below, was prepared largely by subcommittees and correspondence, and is presented to the House of Delegates with the recommendation that it be approved and that the several component county societies be urged to adopt at their earliest opportunity its main features, so that there may be as much uniformity and as little friction as possible in the work of the several county societies. The lack of uniformity in essentials in the present rules of the several county societies results in unfortunate complications and unnecessary work for the officers of both the county and the state societies. The larger county societies will probably wish more exhaustive rules, and can easily add to both the constitution and the by-laws necessary details that will not conflict with the model constitution.

It is not likely that this committee will require more than $100 for next year.

Respectfully submitted,

E. B. Heckel.
G. W. Guthrie.
W. H. Brown.
G. E. Holtzapple.
C. L. Stevens.

CONSTITUTION.

Article I.—Name of the Society.

The name and title of this Organization shall be the Medical Society of the State of Pennsylvania.

Article II.—Purposes of the Society.

The purposes of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Pennsylvania; to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more useful to the public in the prevention and management of disease and in prolonging and adding comfort to life.

Article III.—Component Societies.

Component societies shall be those county medical societies whose constitution and by-laws have been approved by this Society.

Article IV.—Membership.

Section 1. The membership of this Society shall consist of the active members of the component county medical societies who have paid their annual dues for the current calendar year.

Section 2. The secretary of each component county society, acting as the agent of that society and its members, shall forward to the Secretary of this Society the names of those who have paid their dues for the current calendar year, together with the *per capita* assessment for such members and a duplicate of the receipt given each member. Members whose assessment is received by the Secretary of this Society on or before March 31 shall be entitled to all the privileges of this Society for the current calendar year. One whose assessment is received after March 31 shall be entitled to all the privileges of this Society except that he shall not be entitled to any benefit from the Medical Defense Fund from January 1 up to the date of the receipt by the Secretary of this Society of his name and assessment. The *per capita* assessment for new members elected and reported during November and December shall cover the assessment for the following calendar year.

Section 3. Each member in attendance at the annual session shall enter his name on a registration blank, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of this Society, he shall have a right to all the privileges of membership at that session. No member shall take part in any of the proceedings of the annual session until he has complied with the provisions of this section.

Section 4. Any person who is under sentence of suspension or expulsion from a component society or whose name has been dropped from its roll of members shall not be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Section 5. Delegates to this Society from any state society entitled to representation in the American Medical Association shall, by presenting certificates of delegation duly signed, be entitled to seats and to participate in the scientific business of this Society. They shall not be entitled to vote, or to hold office, or be eligible to membership.

Section 6. Any physician of reputable standing not a resident of Pennsylvania, but a member of his own state or territorial medical association, after an introduction by a member present, may by vote of this Society be accorded the privilege of participating in the scientific discussions.

Section 7. Any distinguished physician not a resident of this state but a member of his own state or territorial medical association may be elected an honorary member of this Society by the House of Delegates by a three-fourths vote at an annual session. Not more than two may be thus elected in any one year.

Article V.—House of Delegates.

Section 1. The House of Delegates shall be the legislative body of the Society, and shall consist of: (1) Delegates elected by the component county societies, and *ex-officio* (2) the Trustees, the Secretary and the Treasurer without the right to vote; (3) the President of this Society, and (4) the presidents of the component county medical societies; provided, however, that, if at the close of the roll call on the first meeting of any session the president of any component county society be not present, then the secretary of that society shall be entitled to a seat in place of the president. If any component county society remains without representation at the close of the roll call of the second meeting of any session then the members registered from that county may select from their number the number of delegates which such county is regularly entitled to *elect;* if but one member is registered he shall be seated as the representative of that county. When any delegate is once seated no change shall be made during the session. No individual member shall be entitled to more than one vote.

Section 2. The total voting membership of the House of Delegates shall not exceed 150. Each component county society shall be entitled to one delegate in addition to its president, and the remainder shall be apportioned among the component societies in proportion to their actual active membership as hereinafter provided for in the By-Laws.

Article VI.—Council.

The Council shall consist of the Trustees (who are also the Councilors) and the President and the Secretary, *ex-officio*. Besides its duties mentioned in the By-Laws it shall be the Board of Trustees of this Society and shall constitute the Judicial Council of the Society and the Finance Committee of the House of Delegates. Six Councilors shall constitute a quorum.

Article VII.—Sections.

The House of Delegates may provide for a division of the scientific work of the Society into appropriate sections.

Article VIII.—Sessions and Meetings.

Section 1. This Society shall hold an annual session on the fourth Tuesday of September at such place as may be determined upon by the House of Delegates from year to year, and each session shall continue for three days, or longer if required by the business of the Society. When necessary, the House of Delegates may, by a three-fourths vote, which may be taken by mail, change the time or place of the next annual session.

Section 2. Special meetings either of this Society or of the House of Delegates shall be called by the President on petition of twenty delegates or one hundred members.

Article IX.—Officers.

Section 1. The officers of this Society shall be a President, four Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer, a Manager of Sessions and Exhibits, nine Trustees or Councilors, an Editor, and as many Censors as there are component county medical societies.

Section 2. The officers, except the Trustees, shall be elected annually. The Editor and the Manager of Sessions and Exhibits shall be elected by the Trustees. The terms of the Trustees shall be three years, so that three shall be elected annually to serve three years, provided that no Trustee shall serve more than six years consecutively. All these officers except the President shall serve until the close of the annual session at which their successors are elected.

Article X.—Funds and Expenses.

Funds shall be raised by an equal assessment on each member of the several component societies. The amount of the assessment shall be fixed annually by the Trustees. Funds may also be raised by voluntary contributions, and in any other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of the Society for publications and for such other purposes as will promote the welfare of the profession. All resolutions appropriating funds must be referred to the Trustees for their approval before action is taken thereon, or before they become effective.

Article XI.—Referendum.

Section 1. A general meeting of this Society may, by a two-thirds vote of the members present, order a general referendum on any question pending before the House of Delegates, and when so ordered the House of Delegates shall submit such question to the members of the Society, who may vote by mail or in person within fourteen days. The vote shall be received by the chairman of the Council and be counted by the chairman and Secretary and the result reported to the House of Delegates along with the ballots. If the members voting comprise a majority of the members of the Society, a majority of such votes shall determine the question and be binding on the House of Delegates.

Section 2. The House of Delegates may, by a two-thirds vote, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

Article XII.—The Seal.

Section 1. This Society shall have a common seal, with power to break, change or renew the same at pleasure.

Section 2. The seal shall contain the monogram "A. M. A." and "1847," within a circle on a keystone, at the sides of which shall appear, "Organized, 1848; Chartered, 1890," and the whole surrounded by a double circle containing the words, "Medical Society of the State of Pennsylvania."

Article XIII.—Amendments.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates present at any annual session; provided that such amendment has been presented in open meeting at the previous annual session, and that it has been published during the year in the Journal of this Society, or has been sent officially to each component society at least four months before the meeting, at which final action is to be taken.

BY-LAWS.

Chapter I.—General Meetings.

Section 1. All registered members may attend and participate in the proceedings and discussions of the general meetings and in the scientific work of the sections. The general meetings shall be presided over by the President, or by one of the Vice-Presidents, and at these meetings shall be presented the address of the President together with such scientific papers and discussions as may be arranged for in the program.

Section 2. The general meeting or any of the sections may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and the public.

Chapter II.—House of Delegates.

Section 1. The House of Delegates shall meet on the day before that fixed as the first day of the annual session. It may adjourn from time to time as may be necessary to complete its business, provided that its hours shall conflict as little as possible with the general meetings. The order of business shall be arranged as a separate section of the program.

Section 2. Each component county society shall be entitled to send to the House of Delegates each year its president or, as his alternate, its secretary and a delegate for every one hundred and fifty members, and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) The delegates and alternates should be elected at least six weeks before the annual session of this Society.

Section 3. Twenty Delegates shall constitute a quorum.

Section 4. The House of Delegates shall, through its officers, Council and otherwise, give diligent attention to and foster the scientific work and spirit of this Society, and shall constantly study and strive to make each annual session a stepping stone to future ones of higher interest.

Section 5. It shall consider and advise as to the material interests of the profession and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

Section 6. It shall make careful inquiry into the condition of the profession in each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such component societies as already exist, and for organizing the profession in counties where societies do not exist. It shall specially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every physician in every county of the state who may be made reputable has been brought under medical society influence.

Section 7. It shall encourage postgraduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the component societies.

Section 8. It shall elect representatives to the House of Delegates of the American Medical Association, in accordance with the Constitution and By-Laws of that body.

Section 9. It shall approve all memorials and resolutions issued in the name of this Society before they become effective.

Chapter III.—Censorial and Councilor Districts.

Section 1. The State of Pennsylvania shall be divided into eighteen Censorial Districts, and each district shall have a separate Board of Censors. The Boards shall be formed by the House of Delegates of this Society electing one Censor from each component medical society in the district. Each component medical society is requested to present to the House of Delegates, for its consideration, the name of a suitable member for District Censor. Each district shall hold a district meeting at least once every two years, for the purpose of increasing acquaintance, goodfellowship and organization among the physicians of this district. Only members of a component medical society in that district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component medical society shall be invited to the meetings. The districts shall be constituted as follows:—

First: Chester, Delaware, and Philadelphia.

Second: Bucks, Lehigh, Monroe, and Northampton.

Third: Berks, Montgomery, and Schuylkill.

Fourth: Dauphin, Lancaster, and Lebanon.

Fifth: Adams, Cumberland, Franklin, Fulton, and York.

Sixth: Huntingdon, Juniata, Mifflin, and Perry.

Seventh: Bedford, Fayette, Somerset, and Westmoreland.

Eighth: Allegheny, Greene, and Washington.

Ninth: Beaver, Lawrence, and Mercer.

Tenth: Crawford, Erie, and Warren.

Eleventh: Cameron, Elk, McKean and Potter.

Twelfth: Butler, Clarion, Forest, and Venango.

Thirteenth: Armstrong, Indiana, and Jefferson.

Fourteenth: Clinton, Lycoming, Tioga, and Union.

Fifteenth: Blair, Cambria, Center, and Clearfield.

Sixteenth: Bradford, Sullivan, Susquehanna, and Wyoming.

Seventeenth: Columbia, Montour, Northumberland and Snyder.

Eighteenth: Carbon, Lackawanna, Luzerne, Pike, and Wayne.

Section 2. The Censors of each district shall inquire into the merits of every case of appeal from the decision of a component medical society by a member who has been censured, suspended, or expelled, provided that the appeal be made within three months after the censure, suspension or expulsion. They shall report in writing their decision thereon to the county medical society, and also to the Judicial Council of this Society, before the next following annual session. They shall consider and dispose of, in like manner, all questions affecting the Principles of Medical Ethics that may be referred to them either by a component society or by this Society. The decision of the Censors in every case must be signed by a majority of the Board. In case a district contains an even number of Censors, and a tie vote results, the Councilor for that district shall cast the deciding vote.

Section 3. The state shall be divided into nine Councilor Districts and no member, residing in any district having a resident Councilor, shall be eligible for election as Councilor. The Councilor Districts shall be constituted as follows:—

First: First and Third Censorial Districts.

Second: Fourth and Fifth Censorial Districts.

Third: Second and Eighteenth Censorial Districts.

Fourth: Sixth and Seventeenth Censorial Districts.

Fifth: Seventh and Fifteenth Censorial Districts.

Sixth: Fourteenth and Sixteenth Censorial Districts.

Seventh: Eighth and Ninth Censorial Districts.

Eighth: Tenth and Eleventh Censorial Districts.

Ninth: Twelfth and Thirteenth Censorial Districts.

Chapter IV.—Election of Officers.

Section 1. All elections shall be by ballot and a majority of votes cast shall be necessary to elect.

Section 2. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the second day of the general session. This order of business may be postponed to a definite time and place by a two-thirds vote of those present. In the election of officers of this Society, the Secretary shall call the roll of members of the House of Delegates, and each member, as his name is called, shall come forward to the President's desk and deposit his ballot; but when there is only one candidate for an office, the Secretary may be directed to cast the vote for the House of Delegates. When counting the ballots the President shall call two members forward to assist and the Secretary shall call a member to keep a duplicate tally.

Section 3. Any person known to have solicited votes for, or sought after, any office within the gift of this Society shall be ineligible for any office within two years.

Section 4. Delegates shall not be eligible for election to the office of President or Vice-President.

Section 5. The Chairmen and Secretaries of all sections provided for by action of the House of Delegates shall be elected by the several sections at executive meetings held on the second day of the annual session.

Chapter V.—Duties of Officers.

Section 1. The President shall preside at all meetings of this Society and of the House of Delegates; shall appoint all committees not otherwise provided for; and shall perform such other duties as custom and parliamentary usage may require. On the morning of the first day of the annual session following his election he shall deliver an address at the general meeting on such matters as he may deem of importance to the Society. He may at any time make suggestions in writing to the House of Delegates or to any special or standing committee. He shall as far as practicable visit by appointment the various sections of the state, and assist Councilors and Censors in building up the component societies, and in making their work more practical and useful.

Section 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of the President's death, resignation or removal, the ranking Vice-President shall succeed him.

Section 3. The Treasurer shall give bond of a surety company in the sum of five thousand dollars. He shall hold all funds of the Society, together with bequests and donations. He shall pay money out of the treasury only on a written order from the President, countersigned by the Secretary. He shall annually render to this Society a full account of the state of the funds of the Society. He shall receive an annual salary to be fixed by the Board of Trustees, by whom his books and accounts shall be audited.

Section 4. The Secretary shall give bond of a surety company in the sum of one thousand dollars. He shall attend the general meetings of this Society and the meetings of the House of Delegates, and shall keep minutes of their respective proceedings in separate record books. He shall be *ex-officio* Secretary of the Council. He shall be custodian of all record books and papers belonging to this Society, except such as properly belong to the Treasurer. He shall receive and receipt for the *per capita* assessment from component societies and forward at least every two weeks to the Treasurer of this Society all funds of this Society that have come into his hands, He shall provide for the registration of the Members and the Delegates at the annual session. He shall aid the Councilors in the organization and improvement of component societies, and in the extension of the power and usefulness of this Society. He shall conduct the official correspondence notifying members of meetings, officers of their election, and committees of their appointment and their duties. He shall employ such assistance as may be ordered by the House of Delegates or the Trustees, and shall make an annual report to the House of Delegates. He shall supply each component society with the necessary receipts and blanks for making its reports. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. The amount of his salary shall be fixed by the Trustees, by whom his books and accounts shall be audited.

Section 5. The Assistant Secretary shall act as an aid to the Secretary, especially during annual sessions, and may take his place when necessary as a temporary Secretary.

Section 6. The Manager of Sessions and Exhibits shall give bond of a surety company in the sum of one thousand dollars. He shall carry out all the business details incident to the annual sessions of the Society under the direction and advice of the President and the Secretary. He shall provide suitable accommodations for the meeting places of this Society and of the House of Delegates and of their respective committees, and shall have general charge of all the arrangements. He shall enlist the coöperation of the local Committee on Arrangements and approve all its actions before the Society shall be responsible for expenditures recommended by it. He shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require. He shall have charge of all business details incident to exhibits and concessions. He shall render to the Board of Trustees a full and itemized account of all receipts and expenditures on account of the annual session and pay over to the Treasurer any balance left in his hands. His duties shall not conflict with the specified duties of the Secretary concerning the annual sessions of this Society. He shall receive an annual salary to be fixed by the Board of Trustees, by whom his books and accounts shall be audited.

Section 7. The Editor shall, under the supervision of the Trustees, publish the Pennsylvania Medical Journal.

Chapter VI.—The Trustees, or Councilors.

Section 1. The Board of Trustees, or Council, shall meet on the day preceding the annual session, and daily during the session, and at such other times as necessity may require, subject to the call of the chairman, or on petition of three Councilors. It shall meet on the last day of the annual session of the Society to organize and outline work for the ensuing year. It shall elect a chairman, and a clerk, who, in the absence of the Secretary of the Society, shall keep a record of its proceedings. It shall, through its chairman, make an annual report to the House of Delegates.

Section 2. Each Trustee, also called Councilor, shall be organizer and peacemaker for a district consisting of certain counties assigned to him by the Council. He shall visit the counties in his district at least once a year, for the purpose of organizing component societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of component societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor, in the line of the duties herein imposed, may be allowed on a properly itemized statement; but this shall not be construed to include his hotel expenses in attending the annual session of the Society.

Section 3. The Council shall be the Judicial Council of this Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies or to this Society. All questions of an ethical nature brought before the House of Delegates or the general meeting shall be referred to the Council without discussion. It shall decide all questions of discipline affecting the conduct of members or component societies, on which an appeal is taken from the decision of a Board of Censors, and its decision in all such matters shall be final.

Section 4. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into a society. Such societies, when organized and after their Constitution and By-Laws have been approved by this Society, shall be entitled to all rights and privileges provided for component societies, until such counties shall be organized separately.

Section 5. The Council shall provide for, and superintend, the publication and distribution of all proceedings, transactions and memoirs of this Society. All money received by the Council and its agents, resulting from the discharge of the duties assigned to them, must be paid to the Treasurer of this Society. It shall annually audit the accounts of the Treasurer, Secretary, Manager of Sessions and Exhibits and other agents of this Society, and report the same to the House of Delegates. This report shall also specify the character and cost of all publications of this Society during the year, and the amount of all other property belonging to this Society under its control, with such suggestions as it may deem necessary. The Council shall perform the duties indicated in the Chapters on Medical Defense and on Medical Benevolence and may invest the moneys received for these purposes by gift, legacy or otherwise in legal securities only. In the event of a vacancy in the office of the Secretary, of the Assistant Secretary, or of the Treasurer, the Council shall fill the vacancy until the next annual election.

Chapter VII.—Committees.

Section 1. Any member of this Society shall be eligible to appointment on any committee or commission, and the members of the committees or commissions may be present and participate in the debate on their reports in the House of Delegates. The standing committees of this Society shall be as follows:—

A Committee on Scientific Work.
A Committee on Public Policy and Legislation.
A Committee on Society Comity and Policy.
A Committee on Health and Public Instruction.
A Committee on Benevolence.
A Committee on Arrangements.
A Press Committee.

Section 2. The Committee on Scientific Work shall consist of the President, the Secretary and the Manager of Sessions and Exhibits of this Society, the Chairman of the Committee on Arrangements and the Chairmen and Secretaries of the sections and a Chairman appointed annually by the President. It shall determine the character and scope of the scientific proceedings of this Society for each session, subject to the instructions of the House of Delegates. At least thirty days previous to each annual session it shall prepare a program to be issued by the Secretary, announcing the order in which papers and discussions shall be presented.

Section 3. The Committee on Public Policy and Legislation shall consist of three members and the President and the Secretary. The President in 1914 shall appoint one member to serve for three years, one for two years and one for one year, and annually thereafter the President shall appoint one member to serve for three years. This committee shall represent the Society in securing and enforcing legislation in the interest of public health and scientific medicine. It shall act under the directions of the House of Delegates, and in the interim between the meetings of the House of Delegates it is authorized to undertake such activities as in its judgment will further the purposes it represents. It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results for all the people of the state and shall strive to organize professional and lay influences so as to promote the general good of the community in local, state and national affairs. On the request of the committee, the President may appoint in addition advisory members not to exceed five. These advisory members shall act with the committee in the capacity of advisers and assistants; they shall have a voice in all discussions but not the right to vote.

Section 4. The Committee on Society Comity and Policy shall consist of five members. The President in 1914 shall appoint one member to serve for five years, one for four years, one for three years, one for two years, one for one year, and annually thereafter the President shall appoint one member to serve for a period of five years. This committee shall keep informed concerning matters between the Society and the American Medical Association, between the Society and the component county societies, and between the component county societies and their members, and shall recommend to the House of Delegates such action as will best uphold the dignity and honor of the medical profession, exalt its standards, extend its sphere of usefulness and promote the advancement of medical science.

Section 5. The Committee on Health and Public Instruction shall consist of five members. The President in 1914 shall appoint one member to serve for five years, one for four years, one for three years, one for two years, one for one year, and annually thereafter the President shall appoint one member to serve for a period of five years. It shall be the duty of this committee, subject to the House of Delegates, to attempt to bring together the lay people and the profession, to increase confidence in scientifically trained physicians, and to unite the public and the medical profession in a campaign for better health conditions. On request of the committee the President shall appoint such subcommittees for such special work as shall be recommended by this committee. This committee shall nominate the members of said subcommittees to the President for appointment. These subcommittees shall act under the direction of this committee and shall report to this committee at such times and places and in such form as this committee directs.

Section 6. The Committee on Benevolence shall consist of the Secretary, the Treasurer, and three members to be selected annually by the Trustees, at least one of whom shall be a Trustee, this committee to act in behalf of the Board of Trustees. This committee shall select its own chairman, secretary and treasurer, and shall have absolute and confidential jurisdiction over the distribution of such part of the Medical Benevolence Fund as may be placed in its hands. No money shall be paid from its treasury except on warrant signed by the chairman and secretary of the committee, and an annual audit of its accounts shall be made by a committee of the Trustees, the names of the beneficiaries being omitted. All beneficiaries shall be designated by number, and after each annual audit all communications tending to show the personality of the same shall be destroyed. This committee may solicit subscriptions, donations and legacies to be added to the principal of the Medical Benevolence Fund. It may also receive subscriptions to be used for the relief of members in distress from the effects of any special catastrophe.

Section 7. The Committee on Arrangements shall be appointed by the President on the recommendation of the component society of the county in which the annual session is to be held. The committee shall effect an organization and coöperate with and work under the advice and supervision of the Manager of Sessions and Exhibits in making arrangements for the annual sessions.

Section 8. The Press Committee shall consist of the Secretary, the Manager of Sessions and Exhibits and the Chairman of the Local Committee on Arrangements. This committee shall have power to add to its number as needed and shall designate the duties of each member so appointed. This committee shall have general censorship over all matter for the public press in connection with the transactions of the general meetings, the scientific sections and the House of Delegates.

Section 9. The regular committees of the House of Delegates shall be as follows, the appointments to be made annually by the President-Elect early in September from the members already reported as members of the House of Delegates for the coming session of this Society:—

A Committee on Credentials.

A Reference Committee on Reports of Officers and Standing Committees.

A Reference Committee on Scientific Business.

A Reference Committee on New Business.

Section 10. The Committee on Credentials, of the House of Delegates, shall consist of three members of the House of Delegates for the coming session of the Society, to which shall be referred all questions regarding the registration and the credentials of the delegates.

Section 11. The Reference Committee on Reports of Officers and Standing Committees shall consist of three members of the House and to it shall be submitted all reports of officers and committees not otherwise specifically referred to other committees, for its consideration and recommendation before action may be taken by the House.

Section 12. The Reference Committee on Scientific Business shall consist of three members of the House and to it shall be referred all new business of a scientific nature, not otherwise specifically referred to other committees, for its consideration and recommendation before action may be taken by the House.

Section 13. The Reference Committee on New Business shall consist of three members of the House and to it shall be referred resolutions introducing ordinary new business, not specifically referred to other committees, before action may be taken by the House. This committee is specially charged with all resolutions conveying the thanks of the Society.

Section 14. The House of Delegates on recommendation of the Committee on Scientific Work may authorize special commissions to undertake scientific investigations during the interim between the meetings of the House of Delegates. Such commissions shall be automatically discharged unless specifically continued by the House of Delegates.

Section 15. The House of Delegates with the approval of the Trustees may authorize special committees to undertake specific work or to investigate a specific subject. Such committees shall report to the next meeting of the House of Delegates and be automatically discharged unless specifically continued by the House of Delegates.

Chapter VIII.—Medical Defense.

Section 1. At the end of each year, the sum of fifty cents for each member shall be set aside by the Treasurer, as a special fund, to be called the Medical Defense Fund. This fund shall be kept separate from other moneys in this Society and may be invested by the Treasurer under the direction of the Council, and shall be used only for the legal expenses of members threatened with, or prosecuted for, alleged malpractice.

Section 2. The Council shall select a member of the Bar of Pennsylvania as Legal Counsel of the Society, and is empowered to pay such counsel an annual retaining fee. To the Legal Counsel shall be submitted all suits for alleged malpractice brought against members of this Society and he shall be asked to endorse local counsel suggested or engaged by the Councilor to defend such suits. To him also shall all proposed appeals to higher courts be submitted. The proper fees for defending members of this Society in suit for alleged malpractice shall be paid out of the Medical Defense Fund, provided that the member has placed his case in the hands of this Society in accordance with the regulations adopted by the Council and approved by this Society.

Chapter IX.—Medical Benevolence.

Section 1. At the end of each fiscal year the sum of ten cents for each member shall be set aside by the Treasurer as a special fund, to be called the Medical Relief Fund. This fund shall be kept separate from other moneys of this Society, and may be invested by the Treasurer under the direction of the Council. It shall be used only for the relief of pecuniary distress of sick and aged members and of the parents, widows, widowers or children of deceased members.

Section 2. The Council shall have authority to pay, through a Committee on Benevolence, such sums as it may deem proper to relieve the financial distress of any aged or sick member, or of the parents, widow, widower or children of a deceased member, under rules adopted by the Council and approved by this Society.

Chapter X.—County Societies.

Section 1. All county societies now in affiliation with this Society are component county medical societies. Those which may hereafter be organized in this state, which shall have adopted principles of organization, not in conflict with this Constitution or these By-Laws, shall on approval of the Censors of the district become component parts of this Society. Only one component medical society from any one county shall be affiliated with this Society.

Section 2. As rapidly as can be done after the adoption of this Constitution and these By-Laws, a medical society shall be organized in every county in this State, in which no component society exists.

Section 3. Each component society shall judge of the qualifications of its own members; but, as such societies are the only portals to this Society and to the American Medical Association, every reputable and legally registered physician, who does not practice or claim to practice, nor lend his support to, any exclusive system of medicine, shall be entitled to membership.

Section 4. Any physician who may feel aggrieved by the action of a component county medical society in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Censors of the district for their decision.

Section 5. In hearing appeals the Censors may admit oral or written evidence, as in their judgment will best and most fairly present the facts; but in every appeal, efforts at conciliation and compromise shall, on the part of the individual Censors and of the Board, precede all such hearings.

Section 6. When a member in good standing in a component society moves to another county in this State, he shall, on request, be recommended by his society to the component society into whose jurisdiction he moves, for election without the delay attendant upon ordinary applications for membership, and if he present such recommendation within sixty days after his removal he shall retain his membership in this Society for ninety days from date of his transfer while his membership is being transferred from one component society to another.

Section 7. A physician living near a county line may hold his membership in the county most convenient for him to attend, on permission of the component society in whose jurisdiction he resides.

Section 8. Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county. Systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it includes every qualified physician in the county.

Section 9. At some meeting at least two weeks in advance of the annual session of this Society, each component society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred and fifty members and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) Each secretary of the component medical societies shall send a list of such delegates to the Secretary of this Society immediately after their election.

Section 10. The secretary of each component society shall keep a roster of its members and of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of registration or license to practice in the state, and such other information as may be deemed necessary. In keeping such a roster the secretary shall note any change in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall endeavor to account for every physician who has lived in the county during the year.

Section 11. The secretary of each component medical society shall during or before January of each year furnish the Secretary of this Society with a list of the officers and members of his county medical society, and shall report new members as soon as they are qualified as members of his society. He shall send the amount of the members' *per capita* assessment at the same time their names are reported and also duplicates of the receipts given to the members of his society. He shall promptly notify the Secretary of this Society of any change in the addresses of the members of his society, and of losses in membership, giving the cause, such as death (with date), resignation, removal (with present address) or expulsion.

Section 12. Each component society shall notify the Secretary of this Society of any new By-Laws or rules that have been adopted, and furnish for publication in the Journal of the State Society brief notices of its deceased members. Each component society shall designate one of its members to act as reporter for the Journal, who shall furnish such reports of the meetings of his society and such professional news as may be thought desirable for publication.

Chapter XI.—Miscellaneous.

Section 1. No address or paper before this Society except those of the President and invited guests shall occupy more than ten minutes in its delivery, unless the Committee on Scientific Work by unanimous action has granted a definite time limit in excess of ten minutes and has announced this action on the printed program. In the discussions of any papers or groups of papers no member shall speak longer than five minutes, except by unanimous consent.

Section 2. All papers read before this Society or any of the sections shall become the property of the Society. Each paper shall be deposited with the Secretary when read.

Section 3. The deliberations of this Society shall be governed by parliamentary usage, as contained in Robert's Rules of Order, when not in conflict with the Constitution or By-Laws.

Section 4. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

Section 5. At each annual session a public reception shall be provided as part of the program, in honor of the President of the Society. This function shall be under the direction of the Secretary and the Manager of Sessions and Exhibits and shall be paid for by the Society.

Section 6. Under the supervision of the President and the Secretary, the Manager of Sessions and Exhibits may arrange for and direct a display of proper exhibits at the annual session and he shall be governed in the acceptance of exhibits in the commercial exhibition by the rules of the American Medical Association.

Section 7. When satisfactory proof is furnished the House of Delegates that any city or place in the state other than Pittsburgh and Philadelphia can furnish ample hotel accommodations for members and convenient places for the sessions of the Society, such city or place may be selected as the place of meeting.

Chapter XII.—Amendments.

These By-Laws may be amended at any annual session by unanimous consent, after lying over for one day. If there be a dissenting voice, the amendment shall lie over for one year and take the course of amendments to the Constitution.

Chapter XIII.

This Constitution and these By-Laws shall become operative immediately after the adjournment of the annual session in 1914. At the session when this Constitution and these By-Laws are adopted the retiring President shall be continued as President until the installation of his successor at the opening of the next annual session.

DRAFT OF MODEL CONSTITUTION AND BY-LAWS FOR COUNTY SOCIETIES.

CONSTITUTION.

Article I.—Name and Title.

The name and title of this Society shall be The .... County Medical Society of Pennsylvania.

Article II.—Objects.

The objects of this Society shall be the advancement of medical science, the organization of the profession in connection with the Medical Society of the State of Pennsylvania and the American Medical Association, the elevation of the character and the protection of the proper rights and interests of those engaged in the practice of medicine, and the study of the means calculated to render the medical profession most useful to the public and most subservient to the great interests of humanity.

Article III.—Membership.

Section 1. This Society shall consist of Active and Honorary members.

Section 2. Active members must be residents of .... County, or of an adjoining county in which there is no component county medical society, except when it is more convenient for a physician residing in an adjoining county to attend the meetings of this Society and the permission of the component county society in whose jurisdiction he resides has been obtained.

Section 3. Any legally registered practitioner of medicine of good moral character and professional standing, who does not practice or claim to practice any exclusive system of medicine and who is willing to subscribe to the Principles of Ethics of the American Medical Association, shall be eligible as a candidate for membership in this Society, without any restriction as to time or college of graduation, or time of residence in the county, other than ample time to allow the Censors to investigate his character and standing.

Section 4. Any physician who shall procure a patent for a remedy or any instrument of surgery, or who shall give a certificate in favor of a patented or proprietary remedy or patented instrument, or who shall enter into an agreement with an apothecary to receive any compensation or patronage for sending prescriptions to the apothecary, or who shall give or receive a commission for referring a patient, or who shall divide a fee for medical advice or surgical treatment unbeknown to the patient or his next friend, or who shall engage in lodge practice in which he agrees to treat families or individuals for a stated period of time for a given sum, shall be disqualified from becoming or remaining a member of this Society.

Section 5. Honorary members shall be physicians who are non-residents of .... County, or retired physicians formerly active members of this Society. They shall not have the right to vote or hold office, nor shall they be required to pay any dues. Honorary members may be proposed at any regular meeting and if they receive the affirmative vote of not less than three fourths of the members present they shall be declared duly elected.

Section 6. An applicant for membership shall sign a blank supplied by this Society, stating age, residence, college or school from which the degree of M.D. or M.B. was received with the date, and date and place of registration, and shall be endorsed by two members of this Society. Such application, accompanied by the annual dues, shall be presented to this Society at a regular meeting and be referred to the Board of Censors. The Censors shall present their report at the next regular meeting or as soon thereafter as possible, and if the candidate be considered eligible he shall be balloted for. Upon receiving an affirmative vote of not less than three fourths of the members present, the applicant shall be declared duly elected. An applicant who is rejected by the Censors or by the Society shall be immediately notified by the Secretary and his money refunded.

Section 7. An applicant, upon his election, shall, within three months, qualify as a member by signing the Constitution of this Society. An applicant who has been rejected can not again have his name presented within six months. One who has forfeited his membership by failing to pay his dues can not be reinstated until such arrearages have been made good, unless the dues are remitted by a three-fourths vote of all the members present.

Section 8. All communications received by the Censors relative to the character and professional standing of applicants shall be considered strictly confidential.

Section 9. A member of this Society removing to another county in the state shall, if in good standing, receive a letter of recommendation and transfer to the society of the county into which he removes. Failing to deposit his letter of recommendation and transfer with the society of the county into which he removes, within sixty days, unless reason for such failure be shown, the member shall forfeit his membership in this Society.

Section 10. If any member of another component county medical society, who has become an actual resident of this county, or of an adjoining county having no component county medical society, present his letter of recommendation and transfer from his society within sixty days, his name shall, with the approval of the Censors, be placed on the roll of membership of this Society, and the secretaries of his former county society and of the state society shall be so notified.

Section 11. A member who is under sentence of suspension or expulsion shall not be permitted to take part in any of the proceedings or be eligible to any office until relieved of such disability.

Section 12. None of the privileges of membership shall be extended to any person not a member of this Society except by a majority vote of the Society at a regular meeting.

Article IV.—Resignations.

Resignation of membership must be in writing and sent to the Secretary. No member who is in arrears for dues, or against whom charges are pending, can resign.

Article V.—Fees.

Section 1. The annual dues shall be four dollars and must accompany the application for membership. The dues accompanying applications made during October, November and December shall cover the dues for the following calendar year.

Section 2. The annual dues shall be four dollars, payable each January in advance, and any member failing to pay his dues by March 28 shall forfeit his membership and the Secretary shall notify him in writing that his membership has been forfeited by reason of failure to pay his annual dues. The printed notice for the last meeting of the calendar year shall contain the following: "The annual dues of $4.00 for the ensuing year shall be due in January in advance and members failing to pay their dues by March 28 will forfeit their membership." A member of this Society at the age of seventy shall, upon request, be relieved from payment of any further dues to retain his full membership, provided he has been in good standing for not less than the ten years preceding.

Section 3. During the month of February the Secretary shall send a formal bill to each member whose dues for the year have not been paid, and call his attention to the fact that his membership will terminate on March 28 without any action of the Society unless his annual dues are paid by that date.

Section 4. One whose membership has been forfeited by failure to pay his annual dues may be reinstated to full membership without any action of this Society by the payment of his dues any time before October 1 of the same year.

Section 5. Sections 2 and 3 of this Article shall be printed in full on each bill for dues sent to a member. The notice of forfeiture of membership shall also contain Section 4.

Article VI.—Censure, Suspension or Expulsion.

Section 1. A member who is guilty of a criminal offense or of gross misconduct either as a physician or as a citizen, or who violates the Principles of Ethics of the American Medical Association or any of the provisions of this Constitution, shall be liable to censure, suspension or expulsion. Charges against a member must be made in writing and be delivered to the Secretary, who shall immediately furnish a copy to the accused and to the Chairman of the Board of Censors. The Board of Censors shall investigate the charges on their merits, but no action shall be taken by the Board within ten days of the presentation of the charges to the accused, nor before giving the accused and accusers ample opportunity to be heard. The Board shall report (1) that the charges are not sustained; or (2) that the charges are sustained and that the accused be (a) censured; (b) suspended for a definite time, or (c) expelled. Censure or suspension shall require a two-thirds vote by ballot of the members present and voting, and a three-fourths vote by ballot of those present and voting shall be required to expel a member. No action shall be taken by the Society in such cases until at least six weeks have elapsed since the filing of the charges. A member suspended for a definite time shall be reinstated at the expiration of the time. A member expelled from this Society for any cause shall be eligible for membership after one year from date of expulsion and on the same terms and in like manner as original applicants.

Section 2. Any member of this Society who is censured, suspended or expelled shall have the right to appeal to the Censors of this district; this appeal, however, must be made in writing within three months after the act of censuring, suspension or expulsion.

Section 3. Kindly efforts in the interest of peace, conciliation or reformation, so far as possible and expedient, shall precede the filing of formal charges affecting the character or standing of a member, and the accused shall have opportunity to be heard in his own defense in all trials and proceedings of this nature.

Article VII.—Officers.

Section 1. The officers of this Society shall consist of a President, two Vice-Presidents, a Secretary, a Treasurer, a Reporter, and a Board of three Censors.

Section 2. The President shall preside at all meetings, keep order and decide points of law, sign orders on the Treasurer in connection with the Secretary, and perform such duties as are usual with the presiding officer. He shall appoint all committees that are not otherwise provided for. He shall deliver an address at the January meeting closing his administration.

Section 3. In the absence of the President, the Vice-President, in the order of seniority, shall preside and perform the duties of the President. In the absence of the President and Vice-Presidents, the meeting shall select one of its members president *pro tem.*

Section 4. The Secretary shall send each member printed or written notice of all meetings and of all actions affecting his relationship to this Society; send out bills to all members and notify those who have forfeited membership; collect all dues or assessments, paying such moneys over to the proper parties and taking receipt for the same. He shall notify all members of committees of their appointment. Within two weeks after the annual meeting of this Society he shall furnish the Secretary of the State Society with a full list of the officers of this Society. He shall promptly notify the Secretary of the State Society of any changes in the membership list, either new members, removals, deaths, suspensions, expulsions, resignations or changes of address and any changes in or additions to this Constitution. He shall furnish the Secretary of the Medical Society of the State of Pennsylvania the name of the delegate member from this Society in the House of Delegates, together with the names of two alternates for each delegate member, within two weeks after their election, and also the name of the nominee for district censor. He shall keep a list of the non-affiliated registered physicians in the county and on the first of December of each year he shall furnish the Secretary of the Medical Society of the State of Pennsylvania with a list of all changes among such legal but non-affiliated practitioners of the county since his last report, giving new names, with proper data, changes in address, removals with present address, and deaths. He shall receive as a salary the sum of twenty dollars a year.

Section 5. The Treasurer shall receive all moneys turned over to him by the Secretary, giving the latter a receipt for the same. He shall deposit the same in a bank or trust company to be designated by this Society. The account shall be carried in the name of this Society. He shall pay out no money except upon the order of the Society, signed by the President and the Secretary.

Section 6. The Board of Censors shall organize during the month of January by the election of the senior member as chairman and one of their number as secretary. The chairman shall preside and call special meetings of the Board when necessary. The secretary shall keep a correct minute of all the transactions and, in the absence of the chairman, shall perform all duties devolving upon that office. The Board shall hold meetings at such time and place as it may elect. The members of the Board shall investigate charges of unprofessional conduct, violations of the Principles of Ethics and of the Constitution and By-Laws of this Society, when properly referred in writing, and make full report of their decisions and conclusions. They shall also investigate questions of ethical character in the relations of members to each other when presented by individual members in writing and in proper form, and make report to the aggrieved member and to this Society if in their judgment the best interests of the Society are thereby subserved. The Board shall have authority to summon the presence of any member to appear before its members to give testimony on any question that has been properly brought for their consideration. They shall inquire into the fitness of all applicants for membership as regards qualifications, character and standing and other requirements of the Constitution and By-Laws. All questions of disputed elections of applicants for membership or officers in this Society shall be referred to the Censors for investigation. The Censors shall audit the accounts of the Secretary and Treasurer at the close of each fiscal year and make their report at the January meeting and shall have a general supervision over the affairs of the Society and shall be ready at all times to offer such suggestions as will tend to the betterment of the Society.

Section 7. If any member fails to accept the office to which he has been elected and to perform the duties thereof, said office shall be declared vacant and an election ordered to fill said vacancy.

Article VIII.—Elections.

The officers shall be elected in January and assume their respective offices at the close of the meeting. At the first meeting under this Constitution, there shall be elected three Censors, one to serve one year, one to serve two years and one to serve three years; at each annual election thereafter, one Censor shall be elected to serve three years. At the June meeting representatives to the Medical Society of the State of Pennsylvania shall be elected in accordance with the Constitution and By-Laws of that Society, and a suitable member for District Censor shall be recommended to the House of Delegates of the Medical Society of the State of Pennsylvania. (The President of this

Society or, in his absence, the Secretary is, according to the Constitution of the Medical Society of the State of Pennsylvania, an *ex-officio* member of the House of Delegates of that Society, and therefore should not be elected as a delegate.)

Article IX.—Meetings.

Section 1. The fiscal year of this Society shall coincide with the calendar year. The regular meetings shall be held on the second Tuesday of each month. (Here give place and hour of meeting.)

Section 2. A quorum for the transaction of business shall consist of not less than six members, but for the reading of papers or the discussion of medical subjects any number may suffice.

Article X.—Manual of Rules.

Robert's Manual of Rules shall determine all points of order not provided for.

Article XI.—Rules of Conduct.

The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members of this Society in their relations to each other and to the public.

Article XII.—Amendments.

Any amendment to this constitution shall be proposed in writing and signed by three members of this Society. It shall be read at a regular meeting, and then held over until the next regular meeting before action on it can be taken. A copy of the proposed amendment shall be furnished each member at the same time with the call for the meeting at which action upon the amendment is to be taken. It shall require an affirmative vote of at least two thirds of the members present to insure the adoption of an amendment to this constitution.

BY-LAWS.

Law 1. The President shall select one member of this Society who, with himself and the Secretary, shall constitute an Executive Committee, of which he shall be Chairman.

Law 2. The Executive Committee shall arrange all programs, have charge of all entertainments unless otherwise provided for, pass on all bills and select the meeting place of this Society.

Law 3. The Executive Committee shall investigate the standing of any illegal practitioner that may be brought to its notice and, when so directed by a majority vote of this Society at a regular meeting, shall prosecute the same.

Law 4. Any member having knowledge of any illegal practitioner being located and practicing medicine in this county shall proceed to collect the necessary evidence and place the same in the hands of the Executive Committee.

Law 5. The three ex-presidents immediately preceding the present incumbent shall act as a Nominating Committee. This committee shall nominate a full ticket for each office and report to the Society on or before the day of election. After this report has been received, any member shall have the right to nominate another member for any office.

Law 6. Any By-Law or Rule of Order may be suspended for the period of one meeting by an affirmative vote of two thirds of the members present, and may be amended the same as provided for an amendment to the Constitution.

Rules of Order.

1. Any member wishing to speak must first address the Chair and be recognized.

2. The Chair shall decide all questions of order, and his decision shall be final unless appealed from to the Society, when the question shall be "Shall the decision of the Chair be sustained?"

3. In discussions on papers or business no speaker shall exceed five minutes at one time, nor shall he speak a second time until all have had an opportunity to speak once.

4. If a member be called to order by the Chair, he shall cease speaking until the point of order is determined.

5. If called for by three members, the yeas and nays on any question shall be recorded.

6. When a question is before this Society, no motion shall be received except for the previous question, to lay on the table, to postpone indefinitely, to postpone to a specified time, to amend or to adjourn.

7. A motion shall not be subject to debate until it shall have been seconded and stated by the Chair.

8. Suggestions, etc., made under remarks for the benefit of the Society shall be noted by the Secretary and brought up under the head of unfinished business at the next meeting.

9. Unless otherwise specified, the member first named on a committee shall be chairman thereof.

Order of Exercises.

1. Call to Order.
2. Roll Call.
3. Reading of Minutes of Previous Meeting.
4. Reading of Communications.
5. Report of Executive Committee.
6. Report of Secretary. (January.)
7. Report of Treasurer. (January.)
8. Report of Censors.
9. Election of Members.
10. Propositions for Membership.
11. Election of Delegates to State Society. (June.)
12. Address of Retiring President. (January.)
13. Report of Nominating Committee. (January.)
14. Further Nominations. (January.)
15. Election of Officers. (January.)
16. Scientific Papers and Discussions.
17. Unfinished Business.
18. New Business.
19. Adjournment.

The Report of the Committee on Health and Public Instruction as printed was on motion referred to the Reference Committee on Reports of Officers and Committees.

Report of the Committee on Health and Public Instruction.

To the President and the House of Delegates:—

Three years ago, when the Committee on Health and Public Instruction was first appointed, reference was made to the work of a committee of similar name that represented the American Medical Association. It was understood that the state committee was to work in harmony with the national. Therefore a reference to the latter committee's work may well be incorporated in this report.

The complete report of the national committee is too long to read at this time. We hope that you will read the entire copy later. (Copies of this report will be distributed to members of the House of Delegates.)

It provides for action along three lines:—

I. A thorough investigation of present public health conditions in the United States, with a view to securing more accurate information on all phases of the public health problem than is now available.

II. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibility of utilizing such knowledge in the prevention of disease, the reduction of the death rate and the prolongation of human life.

III. The crystallizing of such educated public sentiment in necessary public health laws, regulations and ordinances, which will render possible a conservation of human life commensurate with our advancing knowledge and which will render such laws effective through the only force available in this country, namely, educated and enlightened public opinion.

The Medical Society of the State of Pennsylvania can help tremendously in all of these lines, but especially in the second and third.

Each component county society should have a live subcommittee, to coöperate with the state committee, and through it with the national committee. These subcommittees should see to it that the many pamphlets issued by the national committee should be published in newspapers throughout the state. While it is true that the national committee has sent out forty-two bulletins to 4900 newspapers, hundreds of others would willingly publish these authentic utterances if requested to do so by the physicians whom they know. These pamphlets deal with infections, cancer, medical frauds, sex hygiene, flies, baby welfare, school supervision, conservation of vision, medical research, expert testimony, vivisection, etc.

Your committee has sought through the component societies to establish a press bureau in this state through which your officers and committees might reach the public. About half of the component societies have reported acquiescence to us, although others may have exerted an influence upon their local papers and committees.

Some of the component societies have done splendid educational work. Philadelphia County Society has given to the *Public Ledger* a series of excellent health talks. These articles were available for any newspaper. Our committee considered the advisability of furnishing them in plate form for general distribution, but found the cost prohibitive. Moreover we learned that the more influential papers preferred the matter in proof form. If it were possible to arrange for a simultaneous publication of these articles in the future in a number of influential papers, the number of readers might be increased many fold.

Health talks have been given in schools, Y.M.C.A. Associations, etc., in about twenty counties. Health Commissioner Dixon has published a large number of excellent short lessons on health.

J. W. Ellenberger.

REPORT OF THE SUBCOMMITTEE ON CANCER.

To the President and the House of Delegates:—

This committee held its usual annual meeting in Philadelphia on February 7, all the members being present.

The usual letters, urging county medical societies, professors of medical schools, and lecturers in nurses' training schools, to give special attention in their meetings and lectures to the necessity of early diagnosis of cancer, were issued and the many responses that were received led us to think that this phase of the work was well taken care of.

This committee notes with much pleasure the continued work of the National Association for the Prevention of Cancer. The National Association has done so much in the past two years towards educating the public through the lay press, etc., that our own committee has felt that this phase of its own work could well be left in abeyance for a time.

The personal active work that the committee has undertaken has been the distribution of a very valuable article written from our own point of view by Dr. Rodman, and also its own Annual Report, published together with a valuable article on "The Early Diagnosis of Uterine Cancer" by Dr. Weiss, of our committee. These reports were sent to all medical men in the state not members of the State Society, and including some six thousand physicians. The members of the Society were reached in many ways through our state Journal, our own report and the article of Dr. Weiss' having been printed in our own columns, and, therefore, having reached practically every medical man in the state.

Respectfully submitted,

W. L. Rodman.
E. A. Weiss.
Donald Guthrie.
James I. Johnston.
J. M. Wainwright.

SUPPLEMENTAL REPORT.

To the President and the House of Delegates:—

Owing to the broader field of the Committee on Health and Public Instruction, the sub-committee on Public Health Education among Women has not extended its work as in former years, and owing to the increased number of agencies for health education, its work is increasingly hard to classify. However the reports received from a number of counties show very gratifying results.

In Meadville, Crawford County, the Child Welfare Campaign which was begun last year has continued throughout this year and might serve as a model for many other towns which are attempting similar work. Not only the systematic plan of work but the results are very encouraging. A conservative estimate places the number of persons in Meadville attending public health lessons on various phases of home, infant and personal hygiene in a year at between 1900 and 2000.

In Williamsport lectures on health have been given in coöperation with the Home and School League and were well attended.

In Bradford, the course of lectures arranged by the Public Health Education Committee of the McKean County Medical Society had a large attendance.

In Reading, Wilkes-Barre, Easton, as well as in Philadelphia and Pittsburgh, many of the women's clubs and other organizations have asked for lectures on quite a variety of health topics, and are glad to coöperate with us.

The representative of our committee in Wilkes-

Barre is also a member of the Hygiene Committee of the Federation of Women's Clubs of Pennsylvania and thus has an opportunity for broader work.

Many of the committee have done good work in various ways which can not be reported here.

The Council on Health and Public Instruction of the A. M. A. has asked the state and county societies to cooperate with the Central Committee for Public Health Education among Women in its Infant Welfare Campaign, which is its special work this year, and is being done in coöperation with a number of national organizations. The Central Committee has also arranged four short lists of books representative of the best on health and hygiene of women, girls and babies respectively and the rationale of social hygiene. Many librarians are cooperating by distributing these lists and by securing the books for public use.

The open meeting for women arranged by this committee at the time of the annual session of the State Society in Philadelphia was very successful and it is hoped that the one to be held during the present session will be equally so, and may further the cause of our committee.

Respectfully submitted,
Elizabeth L. Martin.

The Report of the Commission on Medical Expert Testimony as printed was on motion referred to the Reference Committee on Reports of Officers and Committees.

Report of the Commission on Medical Expert Testimony.

To the President and the House of Delegates:—

The Commission on Medical Expert Testimony, appointed by the Medical Society of the State of Pennsylvania at its last meeting, to confer with members of the legal profession regarding the errors existing in the present method of giving and taking expert testimony, reports as follows:—

A policy of publicity and agitation of the subject was adopted by the commission, wherein a circular letter was sent to the secretary of each county medical society requesting that a symposium on expert medical testimony be held and the legal fraternity be invited.

A similar letter was also sent to the secretary of each county bar association asking him to confer with the secretary of the medical society of that county, and arrange for representative legal men to be present to take part in the discussion. The replies to this letter showed a wide-spread interest in the subject of medical expert testimony by both professions.

Symposiums on medical expert testimony, in which the legal profession took an active part, were held by the following: Allegheny County Society, January 20, 1914, the commission being represented by Drs. John W. Boyce and Joseph E. Willetts, Pittsburgh; McKean County Society, March 3, represented by Dr. John W. Boyce, Pittsburgh; Northumberland County Society, March 4, represented by Dr. Harvey F. Smith, Harrisburg; Lycoming County Society, March, 20, represented by Dr. Francis P. Ball, Lock Haven; Somerset County Society, April 21; Crawford County Society, May 6; Mercer County Society, May 8; Warren County Society, May 12, represented by Dr. Francis P. Ball, Lock Haven; Indiana County Society, May 12; Delaware County Society, May 14, represented by Dr. Henry W. Cattell, Philadelphia; Montgomery County Society, May 28, represented by Drs. Francis X. Dercum, and Henry W. Cattell, Philadelphia; Erie County Society, June 2, represented by Dr. John W. Boyce, Pittsburgh; Columbia County Society, June 11, represented by Dr. Albert J. Winebrake, Scranton; Huntingdon County Society, June 11, represented by Dr. George G. Harman, Huntingdon; Chester County Society, June 16, represented by Drs. Henry W. Cattell, and Francis X. Dercum, Philadelphia; Clarion County Society, June, 1914, and Franklin County Society, September 15, 1914.

The attendance, discussion and expression of opinions on the subject of medical expert testimony, by judges and many prominent attorneys of the state, proves conclusively that the ethical members of the bar are anxious for the passage of some law which will provide for the governing of not alone the expert, but also of the attorneys conducting the case. The medical expert is handled on the witness stand, to-day, in the identical way he was one hundred years ago, when men practiced unlicensed, and without diplomas. The obsolete court methods of to-day do not in any way conform to the present-day standard of the science of medicine. At present there is no law defining an expert. He is not recognized, and has no standing in court except by the indulgence of the judge. The correction of the conditions surrounding the expert, when on the witness stand becomes, therefore, a vital necessity to preserve the integrity and dignity of both professions.

A careful study of the reports of the symposiums, emphasizes the fact that this is the almost unanimous opinion of both professions.

The following suggestions by Judge G. A. Endlich, of Reading, are commendable because of the good results which will ensue; because of their simplicity and practicability and because they in no way conflict with the Constitution: (1) The formulation of a stricter definition of expert capacity; (2) The reasonable limitation of the number of experts to be called in any case; (3) The designation of such experts by the court upon nomination by the parties; (4) The abolition of the hypothetical question; (5) The summoning by the trial judge of an expert of his own choice to serve as assessor, or as a witness to review the expert testimony already in, or as both; (6) The payment of expert witnesses out of the public treasury, at least in the first instance.

No one of these measures can be expected to accomplish all that is desirable. If the probable effects of each have been correctly foreshadowed, then collectively they would come very near doing so. A system combining them might be formulated somewhat in this wise:—

I. No person shall be eligible or permitted to testify as an expert in the trial, hearing, etc., of any cause in a court of justice, or before any master, auditor, etc., acting under appointment of any court or judge, unless it be first shown to the satisfaction of such court, master, auditor, etc., (1) that the subject-matter concerning which he is so to testify is fairly within (*a*) his present principal avocation in the locality in which he follows the same, or (*b*) the operation of an invention made by him and reduced to actual working, or (*c*) a line of study or investigation, not ordinarily pursued as a distinct profession or business, in which his researches have been systematic or his opportunities for observation exceptional; (2) if the question involved be one not of purely abstract science, that his experience has been both practical and theoretical; (3) if the subject is one of professional study or science, that he is familiar with the most advanced learning upon the same; (4) if, in the locality in which the proposed witness resides or follows his avocation, or where the trial, etc., is had, the subject is one generally pursued as a medical, surgical or pathological specialty, that he presently so pursues it; (5) that he has not been approached, consulted, employed or paid with reference to the trial on any question involved in it, by either party to the same, or by any one in behalf and by authority of said party, nor (except by way of authorized report to the court) expressed an opinion concerning any such question as applicable to the case on trial.

II. Whenever in any case to be tried, etc., or on trial, etc., before such court, master, auditor, etc., it shall be desired by both parties, or by either party to introduce expert testimony, the parties, or either party upon notice to the other, may apply to the court, or a judge thereof, for the appointment of experts to be called therein; such application, if the purpose to introduce expert testimony exist in advance of the trial, etc., to be made a reasonable time prior to the date for which it is set down, and, if not, then as soon as it is formed in the course of the trial, etc.,—the application moreover to be in writing and filed of record and to set forth the nature of the subject of inquiry with sufficient precision to indicate (1) the admissibility of expert testimony, (2) the limits of the inquiry proposed, (3) the science, art, trade, department, branch, or specialty in which the experts chosen ought to be skilled. Supposing the subject to be one proper for expert testimony, if the parties agree with each other as to a number of persons acceptable to both, and their counsel so certify, the court or judge, unless aware of sufficient grounds for the rejection of them, shall designate from among them a proper number, not less than two, nor more than four: with this proviso, that either party may waive the right to call expert witnesses, in which case but one appointment shall be made from a list to be submitted by the party desirous of calling such, and that, if the parties expressly agree to have but one expert, naming him, and he shall be unobjectionable to the court, or judge, he shall be designated. If the parties neither waive nor agree, or if their agreed list does not enable the court or judge to select two names, each party shall hand in a list of his own, and from each list the court or judge shall designate one or more (not exceeding three), being at liberty to call upon counsel for such information concerning the character, qualifications, etc., of any of the persons named as shall appear desirable in order to a proper selection; to reject, for reasons sufficient in his judgment, all the names on either or both lists: and to call for new nominations accordingly. All agreements as to the selection of experts, and all lists of nominees for that purpose shall be accompanied with the affidavits of the parties and the certificates of their counsel—the former declaring that none of the persons named have been approached, consulted etc., by the affiants or any one in their behalf and by their authority with reference to the case, and the certificates of counsel similarly declaring as to themselves. The names of the persons designated by the court or judge shall be at once certified to the prothonotary or clerk of the court, who shall forthwith notify them of their appointment by the court, or cause them to be summoned, as the case may require, the notification and summons to be accompanied with an exact copy of counsel's statement as to the nature of the subject of inquiry.

III. If any tests, examinations, or inspections are desired, either by the parties, or one of them, or by any of the experts designated by the court, an application for such purpose may be addressed to the court or a judge thereof, in the former case by counsel and in the latter by one or more of the experts: and thereupon the court, on notice, shall make such order as shall appear just and proper, requiring, whenever practicable the joining of all the designated experts in the making of any such test, etc., and directing whether or not a report shall be made of the results thereof. Such report shall be in writing, sealed and filed in the office of the prothonotary or clerk of the court, and shall be opened and communicated to the parties or their counsel only upon the order of the court or judge.

IV. At any stage of a proceeding the court or judge having charge of it may appoint a suitable person, qualified according to law, as expert, to advise such court or judge as to any question which it may be proper to submit to him, to act as assessor at the trial, and in case of conflict between the testimony of experts examined in the course of the same, and whenever else in the opinion of the trial judge the ends of justice would be served thereby, to be called by the trial judge to the witness stand in order to review the expert testimony previously given in the case, subject to cross-examination by counsel; and the trial judge shall, when acting without an assessor, have the right to summon a qualified expert witness of his own choice for the purpose of such review, whenever, in his judgment, it is advisable; being obliged to do so when the opinions expressed by the experts on a material point are evenly divided and conflicting.

V. Except those designated or appointed in the manner indicated, no persons are to be permitted to be called for the purpose of giving expert evidence.

VI. All persons designated as experts by the court on nomination by the parties in any case are either to attend the trial of the same, having, in such case, the right to suggest to the court interrogatories to be put to other witnesses, or, before being called to the stand, are to be furnished with and to peruse a copy of the evidence taken. The preliminary questions of qualification and disinterestedness are, in every instance, first to be disposed of, a failure to establish the former to the satisfaction of the court, or the development by the testimony of any substantial doubt as to the latter point, requiring the exclusion of the witness notwithstanding his appointment by the court. If accepted, his opinions shall be predicated, not upon hypothetical questions, cases or statements, but (1) upon agreed facts; (2) upon the entire consistent evidence of a party or witness, assuming it to be true, or upon the several aspects of his evidence, assuming first the one and then the other to be true; (3) upon facts known to the witness and detailed by him; or (4) upon a combination of all or any of the foregoing. Before being permitted to express any opinion, he shall state whether or not that which is submitted to him as a basis therefor is sufficient for the purpose, and if his answer be in the negative, he shall give his reasons, and no opinion shall upon that basis be asked of him. He shall in no instance be restricted in his testimony to bare answers to interrogatories put to him, if such answers would, in his judgment, mislead, or state only part of the truth, but shall be at liberty, subject to control by the court, to make his statement as full and precise as in his view is necessary in order to present the whole truth.

VII. Experts thus designated or appointed shall be entitled to just compensation for their services to be allowed by the court and promptly paid upon its order out of the county treasury; possibly with the proviso that the amount thereof, or some proportion of it, be charged as part of the costs of the proceeding and repaid to the county by the party or parties liable, upon final decision, for payment of costs.

VIII. Any willfully false statement in any affidavit required in this procedure shall be perjury in the party guilty of making it, and any attempt to approach or influence any person designated by the court as an expert witness or as an assessor, and any bribery of such, and any corrupt attempt to forestall the selection of persons as experts by engaging or consulting them with a view to making them ineligible as experts, shall be criminally punishable in the person making such attempts or offering or giving such bribes.

IX. The several courts are to make such general rules as to notice, waiver and other minor matters of practice as will be most suitable in their respective jurisdictions.

The enactment of the above bill would protect corporate bodies from unscrupulous attorneys, and close the wide open door, upon the crooked "expert."

The commission has by a majority vote accepted Judge Endlich's bill as the most practical presentation of this subject, and recommends its adoption by the House of Delegates. It is further recommended that a thousand copies of said bill be printed for distribution to the members of the legislature at the next session, and that a printed copy of the bill be mailed with the Journal to each member of the society. Dr. Henry W. Cattell and Dr. Francis X. Dercum of Philadelphia accept the Endlich bill in part only, not as a whole, and their signatures to the report are conditional on such acceptance.

The commission desires to thank the medical profession of the state for their interest and hearty cooperation.

Respectfully submitted,
Joseph E. Willetts, Chairman.
Francis P. Ball.
John W. Boyce.
George G. Harman.
Harvey F. Smith.
Albert J. Winebrake.
Francis X. Dercum.
Henry W. Cattell.

The Report of the Committee on Medical Benevolence was on motion referred to the Auditing Committee appointed by the Board of Trustees.

Report of the Committee on Medical Benevolence.

To the President and the House of Delegates:—

Your Committee on Medical Benevolence begs leave to make the following report:—

During the past year, September 1, 1913, to August 31, 1914, the committee has expended $160 on account of benevolence, leaving a balance in the hands of the Treasurer of the committee of $35.05. The report of the Treasurer is herewith appended.

Respectfully submitted,
William S. Wray, Chairman.

treasurer's report.

Receipts:—	
Balance on hand Sept. 20, 1913	$193.03
Nothing received from Treasurer Wagoner since Sept. 13, 1913.	
Interest on daily balances	2.02
	$195.05
Disbursements:—	
October 1, 1913	$10.00
November 29, 1913	25.00
December 15, 1913	25.00
March 13, 1914	25.00
April 3, 1914	25.00
June 13, 1914	25.00
July 8, 1914	25.00
	$160.00
Balance in bank Sept. 14th, 1914	35.05
	$195.05

Edward B. Heckel, Treasurer.

Attention was called to the fact that the Report of the Committee on Public Policy and Legislation did not include the reports of subsidiary committees, nor did it include the itemized accounts for money expended as per instructions of the Trustees.

Moved by Dr. J. M. Baldy, seconded and carried, that all committees be instructed to render reports of their work and expenses to the House of Delegates.

Dr. T. B. Appel presented the following motion on request of the Secretary:—

Resolved, That all resolutions introducing new business be typewritten and in triplicate, one copy for the Secretary, one for the stenographer and one for the reference committee.

On motion of Dr. J. M. Baldy, seconded and carried, the resolution was laid on the table.

The following communication from the Illuminating Engineering Society was read by the Secretary and on motion of Dr. J. M. Baldy, seconded and carried, referred to the Reference Committee on Scientific Business:—

Philadelphia, February 4, 1914.

Medical Society of the State of Pennsylvania,
C. L. Stevens, Secretary,
Athens, Pa.

Dear Sir: The records of this committee, of which I have recently been appointed chairman, indicate that at one time your society was communicated with regarding the possibilities of effecting certain relations with the Illuminating Engineering Society. The latter is interested in spreading the gospel of good illumination where it is possible, and one successful method has been the holding of joint meetings with other associations on the occasion of their annual conventions. Arrangements are made to have such joint sessions either in the afternoon, or in the evening, and the Illuminating Engineering Society provides lecturers, or speakers on subjects bearing on questions of illumination. These lectures are usually illustrated, and are both instructive and entertaining. In all cases, I believe they have been very satisfactory to the members of the associations where they have taken place. I write now to suggest such a joint session with your association, and will be obliged if you will let me know what the prospects are of bringing it about. Any suggestions you may have to make regarding this subject, will be very gratefully received.

Yours truly,
Wm. J. Serrill, Chairman.

Dr. T. B. Appel presented the following resolution, which on motion was carried:—

Moved, That the Medical Society of the State of Pennsylvania thoroughly endorse the project started in the last Legislature wherein a community village for feeble-minded women was inaugurated and urge upon the coming Legislature the further and generous support of this undertaking.

Dr. F. L. VanSickle introduced the following resolution which on motion was carried:—

Resolved, That the reference committees be requested to announce at what time and place they will hear members of the House of Delegates on any reports or resolutions referred to the committees.

Dr. F. L. VanSickle presented the following resolution:—

Whereas, The introduction of Industrial Insurance or Workmen's Compensation Acts has resulted in legislative enactment in twenty-three of the United States, and

Whereas, These acts contain measures of much importance to the medical profession by virtue of their relation to fees to be paid in accidental injuries received in industrial occupations and which according to statistics are in many cases less than they should be, and

Whereas, The state of Pennsylvania, will in the near future, consider measures now being prepared by a Commission on Industrial Insurance, with direction to make a report to the next session of the Legislature of Pennsylvania, with the intent to introduce an act relating to workmen's compensation, any or all of which will in all probability have provisions relating to the business side of the medical profession, therefore, be it

Resolved, That the president of the Medical Society of the State of Pennsylvania appoint a committee of three members of said society, whose business it shall be to aid the medical profession of our state, in all reasonable way by a just endeavor to watch legislation upon the subject of industrial insurance, and cause the provisions relating to fees or any other provisions which may refer to medical or surgical service, to be properly framed in industrial insurance or workmen's compensation acts, which may be recommended by the state commission, or which may come before the Legislature of Pennsylvania during the session of 1915.

This was referred to the Reference Committee on New Business.

The Reference Committee on Reports of Officers and Committees gave notice that they would meet at 10 o'clock this evening at Hotel Schenley.

On motion of Dr. W. L. Estes the House adjourned at 9:30 to meet at 9 o'clock Tuesday morning.

TUESDAY MORNING, SEPTEMBER 22, 1914.

The House of Delegates was called to order in the Lecture Room, Carnegie Institute, at 9 A.M., by President Heckel.

Minutes of Monday evening meeting were read, corrected and approved.

Dr. Delbert Barney, chairman of the Reference Committee on New Business, reported for his committee in reference to the Workmen's Compensation Act resolution introduced last night by Dr. Van-Sickle, recommending that the Society endorse the purpose of the resolution but that it be referred to the Committee on Public Policy and Legislation, the object being to restrict the number of special committees. On motion of Dr. John Oenslager, Jr., Harrisburg, seconded by Dr. T. D. Davis, the recommendation of the reference committee was adopted.

Dr. Adolph Koenig, chairman of the Reference Committee on Scientific Business, reported regarding the communication from the Illuminating Engineering Society referred to his committee last night, recommending that in the absence of evidence of a unity of aims and interests in the two societies, the invitation be declined. On motion of Dr. Wilmer Krusen, seconded and carried, the recommendation of the reference committee was adopted.

Dr. William L. Estes, for the Trustees, presented a set of regulations prepared by a committee of the Trustees for the government of the Medical Defense Fund, which were considered, amended and finally adopted as follows:—

REGULATIONS GOVERNING THE MEDICAL DEFENSE FUND.

1. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank which can be secured either from the secretary of his county medical society, from the Secretary of the State Medical Society or from the Councilor for the district. The Society will not undertake the defense of any member unless his application is made within thirty days after service of summons.

2. The application must be endorsed by unanimous vote of all the censors of his county society present at a special meeting called for this purpose, after a rigid examination of all of the facts in the case, not only as regards the applicant's membership and standing in his society but also as regards the worthiness of the applicant's case. It should be understood that the endorsement of the censors of a county society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return.

3. As soon as the application has received the endorsement of the censors of the county society, it should be sent to the Councilor of the district for his endorsement. The Society will not be responsible for attorney fees incurred in the defense of any member, the defense of whom has not been approved by the Councilor for the district.

4. After the application has received the endorsement of the county society censors and the Councilor for the district, the management of the member's defense will rest with a committee of the Council consisting of the Councilor for the district, the President and the Secretary of the State Society.

5. The applicant should sign a contract vesting in the Committee of Council sole authority to conduct the defense of his suit, and he should agree to make no compromise or settlement of the case without the consent of the Councilor of his district given in writing.

6. The State Society will not undertake the defense of any member who after investigation by the censors and Councilor for the district is believed guilty of criminal abortion, feticide, homicide or any criminal act or who has not conformed to the recognized ethical laws in regard to these cases. It will only defend suit brought in the course of legitimate professional work.

7. The State Society will not pay any expenses for serving subpoenas nor the expense of witnesses residing within the county, nor will it pay judgment or fine awarded or imposed by the jury or court.

8. It should be understood by the members of the State Medical Society that the amount in the Medical Defense Fund is not large, and in all probability, it will be years before this fund will provide unlimited resources for defense of suits against members. Consequently this fund should be conserved by every effort on the part of the membership of this Society.

On motion of Dr. C. P. Franklin, Philadelphia, seconded by Dr. Edward Lyon, Williamsport, the following was wired to Dr. George W. Guthrie, Wilkes-Barre:—

The Medical Society of the State of Pennsylvania extends greetings and sympathy to Dr. George W. Guthrie in his illness with the sincere wish for his speedy recovery and return to our midst.

On motion House of Delegates adjourned at 10 A.M. until one o'clock.

TUESDAY AFTERNOON, SEPTEMBER 22, 1914.

The House of Delegates was called to order at 1:10 P.M., by the President, Dr. Heckel.

Dr. C. P. Franklin presented the following resolution which on motion of Dr. T. D. Davis was referred to the Committee on Public Policy and Legislation with instructions to report at the next meeting of the House of Delegates:—

Whereas, The Optical Society of Pennsylvania propose to introduce a bill into the next legislature to establish their own board of examiners, in order that they may free themselves of the present regulation by the Pennsylvania Bureau of Medical Education and Licensure, and

Whereas, The passage of such a bill will not only give the so-called "Optometrists" the title of "Doctor" or "Licentiate" of Optometry, without their undergoing any examination in anatomy, physiology, or pathology, and

Whereas, In the opinion of the Attorney General of this state the so-called "Optometrists" are already practicing medicine under its present legal definition, and therefore properly subject to the regulation of the said Pennsylvania Bureau of Medical Education and Licensure, and

Whereas, This Society has since its inception stood for the highest ethics as well as the highest ability in those who wish to treat the ailments of the people of Pennsylvania, therefore be it

Resolved, That the Medical Society of the State of Pennsylvania do hereby protest to the Legislature of Pennsylvania against the passage of any such bill as proposed, because of its danger to the health and welfare of the public.

Dr. C. P. Franklin moved that the Medical Society of the State of Pennsylvania heartily endorse the work successfully accomplished during the past year by the Commissioner of Health, Dr. Samuel G. Dixon. Motion was seconded and carried.

On motion of Dr. Wilmer Krusen, seconded by Dr. T. D. Davis, the Medical Society of the State of Pennsylvania commended the labor for the welfare of the people of this state as performed by President J. M. Baldy and the members of the state Bureau of Medical Education and Licensure.

Dr. F. A. Fetherolf, chairman of the Reference Committee on Reports of Officers and Committees, presented the following report:—

Your committee recommends:—

1. That the Report of the Secretary be received and filed.
2. That the Reports of the Individual Councilors be received and filed.
3. That the Report of the Committee on Public Policy and Legislation be received and filed.
4. Your Committee does not approve of Section 2 of Chapter II. of the proposed By-Laws, thereby planning to reduce the number of delegates and limit the representatives of the larger component societies.
5. We recommend that the Commission on Medical Expert Testimony be continued for another year, and that an appropriation of $75.00 be granted to defray the expenses of said committee.

On motion of Dr. Wilmer Krusen, seconded and carried, the Report of the Committee on Society Comity and Policy was made the order of business.

Articles I., II. and III. of the substitute constitution were on motion adopted as printed in the Report of the Committee.

On motion of Dr. Edward Lyon, Williamsport, seconded and carried, Section 1 of Article IV. was adopted as printed and read.

On motion of Dr. Edward Lyon, Section 2, of Article IV. was adopted as read, after discussion by Drs. H. H. Whitcomb, Norristown; T. B. Appel, Lancaster, and W. H. Brown, Richlandtown.

On motion of Dr. Edward Lyon, seconded and carried, Sections 3, 4, 5, 6, and 7, of Article IV. were adopted as printed, without discussion.

It was moved by Dr. L. J. Hammond, Philadelphia, that the words "and (4) the presidents of the component county medical societies; provided, however, that, if at the close of the roll call on the first meeting of any session the president of any component county society be not present, then the secretary of that society shall be entitled to a seat in place of the president" of Section 1, Article V., be stricken out. Motion was seconded by Dr. A. W. Colcord, Clairton, discussed by Dr. J. M. Baldy, and carried.

On motion of Dr. J. M. Baldy, seconded by Dr. A. W. Colcord, Clairton, the words "in addition to its president" in the fourth line of Section 2, Article V., were stricken out.

On motion of Dr. L. J. Hammond, seconded by Dr. A. W. Colcord, Article V. was adopted as amended.

Articles VI., VII., VIII., IX., X., XI., XII., and XIII. were on motion adopted as printed.

It was moved by Dr. W. D. Robinson, Philadelphia, that the Constitution as amended and adopted by Articles be adopted as a whole. Motion was seconded and carried.

Chapter I. of the By-Laws was adopted as printed.

Section 1 of Chapter II. of the By-Laws was adopted as printed.

Dr. L. J. Hammond moved that Section 2, Chapter II. be amended by striking out the words "its president or, as his alternate, its secretary and" in the third and fourth lines, and the words "and fifty" in the fourth line, and that "150" in the eighth line be changed to "100." Motion was seconded by Dr. J. M. Baldy, discussed by Drs. James A. Miller, Grampian; J. M. Baldy, and Charles J. Steim, Kittanning, and carried.

Section 2 as amended was then on motion adopted.

Sections 3, 4, 5, 6, 7, 8 and 9 of Chapter II. were adopted as printed.

Chapters III., IV., V., VI. and VII. were adopted as printed.

Dr. J. B. Carrell, Hatboro, moved to amend Section 1, of Chapter VIII. by substituting for the first sentence the following: "At the beginning of each year every member of this Society shall pay to the Treasurer of his county society five dollars, to be forwarded at once to the Treasurer of the State Society, to be created into a Medical Defense Fund."

After discussion by Drs. C. L. Stevens, Athens; H. W. Mitchell, Warren; Adolph Krebs, Pittsburgh; H. W. Gass, Sunbury; H. C. Kinzer, Lancaster, and W. D. Robinson, Philadelphia, Dr. Carrell's amendment, was on motion, duly seconded, laid on the table.

On motion the House adjourned at 2:10 to meet in the same place at 8 o'clock this evening.

TUESDAY EVENING, SEPTEMBER 22, 1914.

The House of Delegates was called to order in the Lecture Room, Carnegie Institute, at 8 P.M. by President Heckel.

The minutes of the afternoon meeting were read and approved.

On motion, duly seconded, Sections 1 and 2 of Chapter VIII. were adopted as reported by the Committee on Society Comity and Policy.

On motion, duly seconded, Chapter IX. was adopted as printed.

On motion, duly seconded, Sections 1-8 inclusive, of Chapter X. were adopted as printed.

On motion of Dr. H. B. Allyn, Philadelphia, Section 9 was amended by omitting the words "and fifty" in the sixth line as printed, and changing "150" in line 10 to "100." On motion the Section as amended was adopted.

On motion Sections 10, 11 and 12 were adopted as printed.

On motion Chapters XI., XII. and XIII. were adopted as printed.

On motion of Dr. John Oenslager, Jr., Harrisburg, seconded and carried, the By-Laws as adopted by chapters were adopted as a whole.

Moved by Dr. J. M. Baldy, seconded by Dr. John Oenslager, Jr., that the President appoint an editorial committee of three to make any necessary verbal changes in the Constitution and By-Laws.

Motion was carried and the chair apointed as this committee Drs. C. L. Stevens, Athens; Adolph Koenig, and T. W. Grayson, Pittsburgh.

Dr. C. P. Franklin stated that the Committee on Public Policy and Legislation, to which was referred the resolution on optometry recommended the adoption of the preamble and resolution by the society. On motion the recommendation of the committee was accepted and adopted.

The recommendation of the Reference Committee on Reports of Officers and Committees, that the Commission on Medical Expert Testimony be extended for one year, was on motion adopted, and that part of the report recommending an appropriation of $75.00 was referred to the Board of Trustees.

Dr. F. A. Fetherolf, Allentown, chairman of the Reference Committee on Reports of Officers and Committees, reported for his committee, recommending the adoption of the model constitution and by-laws for county societies as proposed by the Committee on Society Comity and Policy, and the recommendation of that committee that the several component county societies be urged to adopt at their earliest opportunity its main features, so that there may be as much uniformity and as little friction as possible in the work of the several county societies. The recommendation of the reference committee was on motion of Dr. Fetherolf, seconded by Dr. Wilmer Krusen, adopted.

Dr. Frank G. Hartman, Lancaster, called attention to the fact that the Reference Committee on Reports of Officers and Committees had at the morning meeting reported, recommending that the report of the Committee on Public Policy and Legislation be received and filed, and that no action had been taken on the report. As it may be necessary for this committee to spend considerable money, Dr. Hartman desired that the recommendation contained in the report be approved by the House of Delegates. On motion of Dr. J. H. Murray, Punxsutawney, seconded and carried, the recommendation contained in the report of the Committee on Public Policy and Legislation was referred to the Board of Trustees, with the recommendation of the House for a liberal appropriation.

The Secretary stated that the Trustees requested the chairmen of the several committees to appear before the Board of Trustees to present their needs for the coming year.

Roll Call by the Secretary showed sixty-two members present.

The Secretary called attention to the fact that Dr. W. G. Miller of Montgomery County had been suggested as a delegate in place of some of the absentees, but that the Committee on Credentials had not been able to seat Dr. Miller without a letter of appointment by the president of the Montgomery County Society.

Dr. John H. Murray presented the following:—

Resolved, That all questions concerning changes and additions in the laws of this society be determined by a roll call vote of the House of Delegates. The chair decided that as this was in the nature of an amendment to the Constitution, it would have to lie over until next year for action.

The Secretary read an invitation from the local Chapter of the D. A. R., inviting the members of the Society to visit the Block House erected in 1764 by General Bouquet, at Fort Pitt, situated at what is now the foot of Penn Avenue. On motion the invitation was accepted with thanks and the members were urged to visit this historic relic.

The Secretary read a communication from the secretary of the American Medical Association regarding the proposed revision of Section 4, Chapter VII., of the By-Laws of the American Medical Association defining the appellate jurisdiction of the Judicial Council. On motion the communication was referred to the Trustees as a reference committee.

Dr. W. Rowland Davies, Scranton, presented the following communication which had received the formal approval of the Beaver, Blair, Butler, Cambria, Center, Chester, Clearfield, Clinton, Crawford, Delaware, Elk, Fayette, Franklin, Greene, Lackawanna, Lawrence, Lehigh, Lycoming, Mercer, Mifflin, Monroe, Montgomery, Northampton, Perry, Potter, Union, Venango, Washington, Westmoreland and York County Medical Societies, and moved that it be referred to the Committee on Public Policy and Legislation, with directions to proceed with the suggestions contained therein:—

To the House of Delegates of the Medical Society of the State of Pennsylvania.

Gentlemen: The Lackawanna County Medical Society, in concurrence with other medical societies in the state, wish to call to your attention for appropriate action the appended resolution which they have passed, and desire that its requirements be concurred in by you and attended to by you and carried out by the appropriate committee to whom it shall be referred without change of intent or meaning.

In view of the fact that there exists upon the statute books of this state certain laws demanding unusual service from physicians for which no pecuniary compensation is allowed, and especially that law which governs the reporting of births, we declare the following to be our position in the matter:—

We hold ourselves to be responsible to the state for a gratuitous report, the fact of a birth only, which has come under our observation.

We assert that the moral and legal responsibility for the report of a birth with its accumulation of data referring to it, should rest upon the parents of the newborn children and not upon the "physician, midwife or friend" who happens to be temporarily engaged as a employee or accidental assistant for the time being in the case.

Furthermore, it is a question influencing the physician's ethical standing, in that by furnishing such knowledge he is making public privileged communications and knowledge.

We assert that fixed forms call for data which the physicians are not necessarily in possession of, and that the demand of the state that they become gatherers of such information forces them to do labor for which no compensation is provided.

We agree that outside of the parents of the newborn child the physician or midwife has more knowledge of the affair than any one else, and in consequence of which we demand:—

That the appropriate committee of the State Society prepare a law for introduction at the next session of the State Legislature, repealing the features of the present law which make the physician liable to conviction and punishment for failure to report births, and that the said penalty be made to apply to the parents of newborn children where it rightfully belongs.

Furthermore, that a code of fixed fees shall be established, by similar procedure, for the production of reports, data, and vital statistics, where demanded by the state at the hands of physicians, and that such compensation shall be sufficient to be a just compensation for the service rendered.

The motion was seconded and discussed by Drs. Frank C. Hartman, Theodore B. Appel, Lancaster; J. W. Albright, Muncy; C. J. Steim, Kittanning; P. E. Biggins, Sharpsville; W. R.

Davies, Scranton; James Johnston, Bradford; Adolph Koenig, Edward B. Heckel, J. D. Milligan, Pittsburgh; J. M. Baldy, T. R. Currie, Philadelphia.

Dr. J. M. Baldy moved to amend the resolution by Dr Davies so as to refer the whole matter to the Committee on Public Policy and Legislation, they to confer with the Commissioner of Health, Dr. Dixon, to see if they can not reach some amicable adjustment by which the objects of the communication will be attained. The amendment was seconded by Dr. T. B. Appel, discussed by Drs. L. H. Taylor, Wilkes-Barre; E. B. Heckel, W. R. Davies, Edward Lyon, L. J. Hammond, and Wilmer Krusen, and declared carried on a division of the House.

On motion of Dr. W. R. Davies the adoption of the amendment was made unanimous.

On motion of Dr. L. H. Taylor the original motion as amended was carried.

House adjourned at 9:40 P.M. to meet at 9 A.M., Wednesday morning.

WEDNESDAY MORNING, SEPTEMBER 23, 1914.

The House of Delegates was called to order in the Lecture Room, Carnegie Institute, by President Heckel at 9:15 A.M.

The election of officers was postponed until 9:45.

The Secretary read the report of the Advisory Committee on Promotion of Efficient Laws on Insanity, which was referred to the Reference Committee on New Business.

Report of the Advisory Committee on Promotion of Efficient Laws on Insanity.

Whereas, It is fundamental to all modern methods of caring for the insane that there be substituted for purely custodial care such supervision and treatment under the constant direction of trained psychiatrists as is suggestive of a hospital rather than of an almshouse or a prison: and

Whereas, The practice now prevalent in most Pennsylvania institutions for the dependent insane, other than such as are supported solely by state appropriations, is to keep the insane and the pauper in one and the same institution, with the inevitable result that the same standard of care is made to apply to both; and

Whereas, It is rarely possible, financially or otherwise, for county almshouses and other local institutions of a similar character to provide either resident psychiatrists or hydrotherapeutic plants, or competent attendants in adequate number, or properly directed occupational training, or such classification of insane patients as is desirable: and

Whereas, The experience of other states, notably of the states of New York and Massachusetts, respectively, has demonstrated the correctness of the principle that the dependent insane should be cared for under the direction of and by the support of the state and of the state alone: therefore be it

Resolved, That the Medical Society of the State of Pennsylvania favors the taking of such measures and the adoption of such laws as will bring about in Pennsylvania at the earliest possible date that all the dependent insane in this state shall be cared for by the state in state institutions.

Whereas, The duties and responsibilities of the present State Board of Public Charities have already proven so onerous that it has been found wise to create a special Committee on Lunacy: and

Whereas, The said Committee on Lunacy, despite every desire to perform its functions so as to accomplish the best possible results, has, nevertheless, been provided neither with sufficient power nor sufficient money to make possible the thoroughly efficient performance of its duties: therefore be it

Resolved, That the Medical Society of the State of Pennsylvania, as a corollary to its endorsement of state care for all the dependent insane, recommends that a separate state board be appointed charged with the sole duty of seeing to it that the provisions of the various Acts of Assembly relating to the insane, defectives and epileptics, respectively, in this state are carried out, and generally to have oversight over all public charities of this character in Pennsylvania, such board to be given the broadest possible powers consistent with preserving individual initiative on the part of the various institutions under its care.

Signed for the committee,

Charles H. Frazier.

Approved: J. B. McAlister, Chairman, Committee on Public Policy and Legislation.

Dr. John Oenslager, Jr., invited the society to hold its next Session in Harrisburg, and Dr. Delbert Barney extended an invitation for Wilkes-Barre. On ballot being taken Harrisburg was chosen as the place of meeting for 1915.

Dr. John H. Murray, Punxsutawney, moved to reconsider the vote by which Article V. of the Constitution was adopted at the meeting yesterday afternoon. Chair declared the motion out of order inasmuch as the minutes of that meeting were adopted at a subsequent meeting held last evening, and that any further action would have to come in the form of amendment to lie over until next year.

The hour fixed for election of officers having arrived the following officers were on several ballots unanimously elected:—

President, Dr. John B. McAlister, Harrisburg; First Vice President, Dr. G. Franklin Bell, Newberry; Second Vice President, Dr. Walter S. Stewart, Wilkes-Barre; Third Vice President, Dr. Jacob R. Lehman, Mountville; Fourth Vice President, Dr. Otto C. Gaub, Pittsburgh; Secretary, Dr. Cyrus Lee Stevens, Athens; Assistant Secretary, Dr. William H. Cameron, Pittsburgh; Treasurer, Dr. George W. Wagoner, Johnstown.

On motion duly seconded the Secretary was instructed to cast the ballot of the House of Delegates for District Censors, the nominees of the several societies having been received. This was done and the District Censors as printed on succeeding pages were elected.

Drs. Alem P. Hull, Montgomery; William T. Sharpless, West Chester; Frederick L. VanSickle, Olyphant; Walter H. Brown, Richlandtown; and Thornton R. Williams, Punxsutawney, were placed in nomination for Trustees for three years. Ballot was taken and Drs. Hull, Sharpless and VanSickle were declared elected as their own successors.

Nominations for members and alternates of the House of Delegates of the American Medical Association having been made and ballots taken the following were declared elected for term ending in 1916:—

Delegates: Drs. Thomas D. Davis, Pittsburgh; Joseph D. Findley, Altoona; William T. Hamilton, Philadelphia; Jesse Y. Scott, Washington. Alternates Designate: Drs. Edward B. Heckel, Pittsburgh; Lewis H. Taylor, Wilkes-Barre; William F. Guilfoyle, Philadelphia; Robert E. Conner, Hickory. Alternates at Large: Drs. Levi J. Hammond, Philadelphia; William M. Robertson, Warren; C. L. Stevens, Athens; Frederick L. VanSickel, Olyphant, term expiring 1916; Drs. John B. Carrell, Hatboro; and William E. Parke, Philadelphia, term expiring 1915.

Roll call showed eighty-eight members present.

Dr. W. D. Robinson, president of the Philadelphia County Medical Society, stated that he had had some conversation with the Harrisburg members and it was thought that there would be a larger attendance next year if the society were to meet in Philadelphia instead of in Harrisburg. For this reason, with the permission of the Harrisburg members of the House of Delegates, he moved a reconsideration of the ballot selecting Harrisburg as the place of next meeting. Motion was seconded and carried. Dr. W. D. Robinson then invited the society to come to Philadelphia next year, and on motion duly seconded, Philadelphia was selected as the place of next meeting.

Dr. Samuel C. Smith, Hollidaysburg, appealed from the decision of the chair in refusing this morning to entertain the motion to reconsider the vote by which Article V. of the Constitution was adopted. On division of the House the President was sustained in his decision.

Dr. J. H. Murray, Punxsutawney, proposed as amendments to the constitution and by-laws the following:—

Article V.—House of Delegates.

Section 1. The House of Delegates shall be the legislative body of the Society, and shall consist of: (1) Delegates elected by the component county societies, and *ex-officio* (2) the Trustees, the Secretary and the Treasurer without the right to vote; (3) the President of this Society, and (4) the presidents of the component county medical societies; provided however, that, if at the close of the roll call on the first meeting of any session the president of any component county society be not present, then the secretary of that society shall be entitled to a seat in place of the president. If any component county society remains without representation at the close of the roll call of the second meeting of any session then the members registered from that county may select from their number the number of delegates which such county is regularly entitled to *elect;* if but one member is registered he shall be seated as the representative of that county. When any delegate is once seated no change can be made during the session. No individual member shall be entitled to more than one vote.

Section 2. The total voting membership of the House of Delegates shall not exceed 150. Each component county society shall be entitled to one delegate in addition to its president, and the remainder shall be apportioned among the component societies in proportion to their actual active membership as hereinafter provided in the By-Laws.

Chapter II.—House of Delegates.

Section 2. Each component county society shall be entitled to send to the House of Delegates each year its president or, as his alternate, its secretary and a delegate for every one hundred and fifty members, and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) The delegates and alternates should be elected at least six weeks before the annual session of this Society.

Chapter X.—County Societies.

Section 9. At some meeting at least two weeks in advance of the annual session of this Society, each component society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred and fifty members and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) The secretary of the society shall send a list of such delegates to the Secretary of this Society immediately after their election.

Dr. Delbert Barney, Chairman of the Reference Committee on New Business, reported for his committee, recommending the adoption of both resolutions in the report of the Advisory Committee on Efficient Laws on Insanity. On motion the recommendation was adopted.

Dr. Delbert Barney, Chairman of the Reference Committee on New Business, moved a vote of thanks to the City of Pittsburgh, to the Allegheny County Medical Society, to the Carnegie Institute, and to the Ladies Entertainment Committee for the generous hospitality which they all have extended to the members and guests of the Medical Society of the State of Pennsylvania, also to the presiding officer, Dr. E. B. Heckel, for his kindly tolerance in our many troubles and in leading us so efficiently. Motion was seconded by Dr. W. L. Estes, and carried.

Dr. T. B. Appel in submitting the report of the Auditing Committee of the Board of Trustees, stated that at the request of Treasurer Wagoner an expert accountant had been employed by the committee, whose sworn report was as follows:—

Commonwealth of Pennsylvania,
County of Allegheny ss

Before me, the subscriber, Franklin H. Allison, in and for the said commonwealth personally appeared W. I. Allinder, Accountant, who, being duly sworn, according to law doth depose and say that he has duly examined Treasurer's books, bank books, securities and Annual Report of Treasurer of Penna. State Medical Society for fiscal year ending Aug. 31, 1914, and finds all correct and in good form, and further deponent said not.

W. I. Allinder.

Sworn and subscribed before me, this 23rd day of Sept., 1914.

Franklin H. Allison, Notary Public.

My commission expires March 25th, 1917.

On motion of Dr. W. D. Robinson the report was received and ordered filed in the Archives of the Society.

The minutes of the Tuesday evening meeting and also of this meeting were read and approved.

On motion the House adjourned at 11:45 *sine die.*

Edward B. Heckel, President.

C. L. Stevens, Secretary.

MINUTES OF THE GENERAL MEETINGS.

TUESDAY MORNING, SEPTEMBER 22, 1914.

The Medical Society of the State of Pennsylvania met in General Meeting in the Music Hall of the Carnegie Institute, Pittsburgh, September 22, 1914, and was called to order at 10:10 a.m., by the President, Dr. Edward B. Heckel, Pittsburgh.

Prayer.

BY THE REV. J. M. THOBURN, JR., D.D., PITTSBURGH.

Almighty God our Heavenly Father we meet at this time, giving Thee hearty thanks for Thyself, for Thy thought of us, for the life that is given us here with all of its possibilities, with all of its inspirations, with all of the gift and grace which Thou hast bestowed. May we as we come into Thy presence be not unmindful of every good and perfect gift. We thank Thee for life's friendships and fellowships, we thank Thee for life's services and ministries and we thank Thee for the wonderful record of the physician and the surgeon in the midst of a suffering humanity, and we pray Thy blessing upon this coming together of these Thy servants. We pray as a result of these deliberations there may come light and helpfulness and skill and discovery which shall make these men tenfold more useful and helpful to their suffering fellows in the days to come. We thank Thee our Father that we have brought to our use through the instrumentality of Thy servants so many of the healing remedies. We thank Thee for all the skill with which Thou hast endowed Thy human creatures. We pray Thee to hasten the time when for every disease there may be found a remedy and when back of every disease the moral as well as the physical cause shall be noted and treated. We pray Thee at this time that the suffering nations that are engaged in warfare, Oh! Thou Prince of Peace, we scarce dare lift our eyes to Thee when we think of this awful carnage, but we pray as in the past Thou hast overruled the wrath of man for Thy praise as in other days Thou hast brought order out of chaos, confusion never dreamed by the combatants, hasten the hour of peace and bring to a conclusion these awful scenes and let the world know as never before, that Thou art God. We pray Thee for the physician and nurse on the battlefield and hospital. We pray Thee for the suffering everywhere that they may be perfected in God's sight through their suffering. Forgive our errors, our blunders, our sins and help us in all things to bless and to keep close to the Great Physician, the Healer of Souls. We ask it for His dear name's sake. Amen.

Dr. John A. Hawkins, president of the Allegheny County Medical Society, delivered the Address of Welcome on the part of the county society. (See page 5.)

W. J. Holland, Ph.D., LL.D., Pittsburgh, gave a Description of Carnegie Institute. (See page 6.)

Dr. William B. Ewing, Pittsburgh, chairman of the Committee on Arrangements, presented the program.

The following delegates from Sister Societies were introduced: Drs. Philip Marvel and W. Blair Stewart, Atlantic City, of the New Jersey State Medical Society; I. G. Amsler and P. G. Walter, Pittsburgh; Adolph Schmidt, McKeesport, of the Pennsylvania Pharmaceutical Association; Dr. J. H. J. Upham, Columbus, Ohio, President, and Dr. C. D. Selby, Toledo, Ohio, Secretary-Treasurer and Editor of the Journal, Ohio State Medical Association; Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., Editor of the *Journal of the Indiana State Medical Association*. Dr. William L. Rodman, Philadelphia, and Dr. Alexander R. Craig, Chicago, Ill., President and Secretary respectively of the American Medical Association, both members of our Society, were also present and invited with the other guests to seats upon the platform.

The President's Address was delivered by Dr. Edward B. Heckel, Pittsburgh. (See page 1.)

"The Year's Work of the Medical Defense Fund" was read by Dr. C. L. Stevens, Athens.

The remainder of the meeting was devoted to a symposium on "Treatment of Cerebrospinal Syphilis by Salvarsanized Serum According to the Swift-Ellis Method."

"Importance of the Early Recognition of Invasion of the Nervous System" was read by Dr. William K. Walker, Pittsburgh.

"Results in a Series of Forty-five Cases Treated by this Method" was read by Dr. Cornelius C. Wholey, Pittsburgh.

"The Swift-Ellis Treatment of Syphilis of the Central Nervous System from the Laboratory Standpoint" was read by Dr. Ernest W. Willetts, Pittsburgh.

The symposium was discussed by Drs. W. E. Robertson, Philadelphia; Edward E. Mayer, Pittsburgh; Tom A. Williams, Washington, D. C.; H. W. Mitchell, Warren, and closed by Drs. Walker, Wholey and Willetts.

Adjourned until Wednesday, September 23 at 9:30 a.m.

WEDNESDAY MORNING, SEPTEMBER 23, 1914.

The meeting was called to order by the First Vice-President, Dr. Henry D. Jump, Philadelphia.

The meeting was devoted to a symposium on "Radium."

"The Local Application of Radium in Surgery" was read by Dr. Isaac Levin, New York.

"The Use of Natural Water and Artificially Prepared Radio-Active Solutions in Internal Medicine" was read by Dr. George D. Kahlo, White Sulphur Springs, W. Va.

"The Intravenous Injection of Radium Salts" was read by Dr. Joseph B. Bissell, New York.

"Radium in Cutaneous Lesions" was read by Dr. William Allen Pusey, Chicago.

"A Comparison of the Uses of the Roentgen Ray and of Radium, with Lantern Demonstrations" was presented by Dr. William S. Newcomet, Philadelphia.

The symposium was discussed by Drs. William H. Cameron, Jacob Rosenbloom, Pittsburgh; Donald McCaskey, Witmer; G. B. Eusterman, Rochester, Minn., and closed by Drs. Levin, Kahlo, Pusey, and Newcomet.

Adjourned until Thursday, September 24, at 2 p.m.

THURSDAY AFTERNOON, SEPTEMBER 24, 1914.

The meeting was called to order at 2 p.m., by the President, Dr. Heckel.

"Established Values in Dietetics" was read by Dr. Lawrence Litchfield, Pittsburgh, and discussed by Drs. B. Franklin Stahl, Robert N. Willson, Philadelphia; DeWitt B. Nettleton, Sewickley, and closed by Dr. Litchfield.

"The Frequency of Medication and Intravenous Medication" by Dr. M. Howard Fussell, Philadelphia, was, on motion, read by Dr. Henry D. Jump, Philadelphia, Dr. Fussell having been called home by the serious illness of his son.

"The Work of the Bureau of Medical Education and Licensure in Relation to State Medicine" was read by Dr. J. Montgomery Baldy, Philadelphia, and discussed by Drs. William L. Estes, South Bethlehem; John B. Carrell, Hatboro, and closed by Dr. Baldy.

On motion of Dr. John A. Hawkins, Pittsburgh, seconded and carried, a rising vote of thanks was given to Dr. Baldy and the Bureau of Medical Education and Licensure for the most excellent work accomplished.

Dr. H. D. Jump, Philadelphia, moved that a vote of thanks be sent to the Allegheny County Medical Society and to its very efficient Committee on Arrangements. This was seconded and carried, and President Heckel requested the Secretary to send a letter embodying this vote of thanks to the Allegheny County Medical Society.

President Heckel stated that in view of the adoption of a new Constitution and By-Laws by the House of Delegates, the Society now has a President and President Elect. The President Elect will not take office until the fourth Tuesday of September, 1915. Dr. John B. McAlister, Harrisburg, is the President Elect and in the interval Dr. Heckel will continue as President.

Society in General Meeting adjourned at 4:50 P.M.

EDWARD B. HECKEL, President.

CYRUS LEE STEVENS, Secretary.

MINUTES OF THE SECTION ON MEDICINE.

TUESDAY AFTERNOON, SEPTEMBER 22, 1914.

The Section on Medicine convened at 2 P.M., in the Music Hall of the Carnegie Institute, Pittsburgh, September 22, 1914, and was called to order by the Chairman, Dr. Alfred Hand, Jr., Philadelphia.

In the absence of the entire Executive Committee the Chairman appointed the following committee: Drs. D. H. Strickland, Erie; John B. McAlister, Harrisburg, James I. Johnston, Pittsburgh, Chairman.

The Chairman's Address was read by Dr. Hand.

"Salvarsan in the Therapeutics of Childhood," by Dr. Theodore LeBoutillier, Philadelphia, was, upon motion, read by the Secretary, Dr. Thomas Grier Simonton, Pittsburgh, in the absence of Dr. LeBoutillier.

"Syphilis in Children" was read by Dr. William C. Hollopeter, Philadelphia.

The preceding two papers were discussed by Drs. Clarence M. Harris, Johnstown; George B. Klump, Williamsport; John A. Kolmer, Philadelphia, and H. G. Wertheimer, Pittsburgh.

"The Duration of the Infection in Scarlet Fever" was read by Dr. Maurice Ostheimer, Philadelphia, and discussed by Drs. Henry T. Price, Pittsburgh; John A. Kolmer, Henry D. Jump, Robert N. Willson, and Alfred Hand, Jr., Philadelphia; and B. Franklin Royer, Harrisburg.

"Recent Advances in Diagnosis in Pediatrics" was read by Dr. John P. Sinclair, Philadelphia, and discussed by Drs. Joseph H. Barach, Pittsburgh, and John A. Kolmer, Philadelphia.

"Ductless Gland Irregularities in Backward Children" was read by Dr. E. Bosworth McCready, Pittsburgh, and discussed by Drs. J. Madison Taylor and William E. Robertson, Philadelphia; Cornelius C. Wholey and William K. Walker, Pittsburgh; and Tom A. Williams, Washington, D. C.

"Sero-Enzymes in Pregnancy and Disease" was read by Dr. John A. Kolmer, Philadelphia, and discussed by J. Bronfenbrenner, Ph.D., Pittsburgh.

Attendance was one hundred and ninety.

Adjourned until Wednesday, September 23 at 2 P.M.

WEDNESDAY AFTERNOON, SEPTEMBER 23, 1914.

The Section was called to order at 2 P.M. by the Chairman, Dr. Hand. The minutes of the preceding meeting were read.

The Executive Committee reported the nominations of Dr. Thomas Grier Simonton, Pittsburgh, for Chairman, and Dr. J. Wesley Ellenberger, Harrisburg, for Secretary. On motion, seconded and carried, the Chairman cast the ballot for the election of Dr. Simonton, and the Secretary for Dr. Ellenberger, and they were declared duly elected.

"Prevention of Typhoid Fever by Vaccination" was read by Maj. Eugene R. Whitmore, U.S.A., Washington, D. C., and discussed by Drs. Joseph C. Ohail, W. Charles White, J. Bronfenbrenner and John A. Lichty, Pittsburgh.

"Treatment of Typhoid Fever by Typhoid Vaccines" was read by Dr. Edward B. Krumbhaar, St. Martins.

"Clinical Observations in Some of the Effects of the General Continuous Flow Baths" was read by Dr. Chauncey L. Palmer, Pittsburgh, and discussed by Dr. T. G. Simonton, Pittsburgh.

"Are We Exaggerating the Dangers of High Arterial Pressure?" was read by Dr. David Riesman, Philadelphia, and discussed by Drs. M. Howard Fussell, Robert N. Willson, Hobart A. Hare, H. B. Allyn, J. F. Prendergast, Philadelphia; Philip Marvel, Atlantic City, N. J.; Joseph H. Barach, Pittsburgh, and Tom A. Williams, Washington, D. C.

"The Correction of Abnormal Blood Pressure" was read by Dr. A. Bern Hirsh, Philadelphia, and discussed by Drs. Omar T. Cruikshank, A. J. Hopkins, Pittsburgh; Donald McCaskey, Witmer, and closed by Dr. Hirsh.

"Appendicitis as Seen by the Internist; Reports Based upon About 700 Cases" was read by Dr. John A. Lichty, Pittsburgh, and discussed by Drs. M. Howard Fussell and Ernest Laplace, Philadelphia; John J. Buchanan, Pittsburgh; and closed by Dr. Lichty.

"Appendiceal Dyspepsia" was read by Dr. John J. Gilbride, Philadelphia, and discussed by Dr. Ernest Laplace, Philadelphia.

"Banti's Disease; Report on Operative Cases" was read by Dr. Joseph Sailer, Philadelphia, and discussed by Drs. John H. Jopson and David Riesman, Philadelphia.

Attendance was over three hundred.

Adjourned at 6:15 P.M., until Thursday, September 24, at 9:30 A.M.

THURSDAY MORNING, SEPTEMBER 24, 1914.

The Section was called to order at 9:30 A.M., by the Chairman, Dr. Hand.

"The Heart in Acute Infections" was read by Dr. Robert N. Willson, Philadelphia, and illustrated by lantern slides; this was discussed by Drs. William Egbert Robertson and T. R. Currie, Philadelphia; John W. Boyce, Pittsburgh, and closed by Dr. Willson.

"Observations on Epilepsy, Chiefly from an X-ray Standpoint" was read by Dr. T. M. T. McKennan, Pittsburgh. Exhibition of plates was made by Dr. George C. Johnston, Pittsburgh. These were discussed by Drs. Charles H. Henninger and E. E. Mayer, Pittsburgh; Ralph H. Spangler, Philadelphia, and closed by Dr. McKennan.

"Arthritic Neuritis" was read by Dr. John H. W. Rhein, Philadelphia, and discussed by Drs. J. Madison Taylor and Robert N. Willson, Philadelphia; Henry Finkelpearl, Pittsburgh, and closed by Dr. Rhein.

"A Form of Diabetic Coma not Due to the 'Acetone Bodies'" was read by Dr. Jacob Rosenbloom, Pittsburgh, and discussed by Dr. Lawrence Litchfield, Pittsburgh, and closed by Dr. Rosenbloom.

"A Review of Recent Experimental Work Upon the Relation of Iron and the Iron Metabolism to Anemia" was read by Dr. J. Harold Austin, Philadelphia.

The minutes of the preceding and present meeting were read.

Dr. Simonton was introduced by the retiring chairman, Dr. Hand.

Upon motion of Dr. William E. Robertson, Philadelphia, a vote of thanks was tendered Dr. Alfred Hand, Jr., for the courteous manner in which he had presided over the meetings. This was seconded and carried.

Section adjourned *sine die*.

ALFRED HAND, JR., Chairman.

THOMAS GRIER SIMONTON, Secretary.

MINUTES OF THE SECTION ON SURGERY.

TUESDAY AFTERNOON, SEPTEMBER 22, 1914.

The Section on Surgery convened in the Lecture Hall of the Carnegie Institute, Pittsburgh, September 22, 1914, and was called to order at 2 P.M., by the Chairman, Dr. J. Torrance Rugh, Philadelphia.

Dr. H. Augustus Wilson, Philadelphia, moved that a telegram be sent to Dr. George W. Guthrie of Wilkes-Barre, expressing the sympathy of the Section because of his illness.

"Arthroplasty" was read by Dr. Stewart L. McCurdy and discussed by Drs. Walter Gustav Stern, Cleveland, Ohio, and Herbert B. Gibby, Wilkes-Barre.

"Surgery of the Spinal Cord" was read by Dr. J. Stewart Rodman, Philadelphia, and discussed by Drs. Charles H. Frazier and Ernest Laplace, Philadelphia; Theodore Diller, Pittsburgh, and closed by Dr. Rodman.

"Hip Disease with Some Lantern Slides Showing Progress and Final Results" was presented by Dr. John Ridlon, Chicago, Ill., and discussed by Drs. H. Augustus Wilson, Philadelphia; Richard J. Behan, and John J. Rectenwald, Pittsburgh, and closed by Dr. Ridlon.

"The Significance of Pain in the Lower Back and Legs, from the Orthopedic Standpoint" was read by Dr. David Silver, Pittsburgh, and discussed by Dr. DeForest P. Willard, Philadelphia, and closed by Dr. Silver.

"Original Uses of the Bone Graft in Fractures, Spinal and Other Deformities" was read by Dr. Fred H. Albee, New York, and was discussed by Drs. J. Torrance Rugh, Philadelphia, and C. W. Delaney, Altoona.

"Intestinal Stasis in Its Relation to Gastric and Duodenal Ulcer" was read by Dr. Ernest Laplace, Philadelphia, and discussed by Dr. Levi Jay Hammond, Philadelphia.

"The Extraperitoneal Operation in Strictures of the Sigmoid Colon" was read by Dr. William M. Beach, Pittsburgh, and discussed by Drs. George Erety Shoemaker and Ernest Laplace, Philadelphia.

"Dependent Intercostal Drainage in Acute Empyema" was read by Dr. T. Turner Thomas, Philadelphia, and discussed by Drs. Henry D. Jump, and Nathaniel Ginsburg, Philadelphia; John J. Rectenwald, Pittsburgh, and closed by Dr. Thomas.

Adjourned until Wednesday, September 23, at 2 P.M.

WEDNESDAY AFTERNOON, SEPTEMBER 23, 1914.

The Section was called to order at 2 P.M., by the Chairman, Dr. J. Torrance Rugh. The minutes of the preceding meeting were read and approved.

The Executive Committee reported the nominations of the Section officers as follows: Chairman, Dr. Floyd E. Keene, Philadelphia; Secretary, A. Ralston Matheny, Pittsburgh. The action of the Executive Committee was accepted and approved.

"The Treatment of Fibromyomata Uteri; Whether Surgery or Radio-Therapy" was read by Dr. Stephen E. Tracy, Philadelphia, and discussed by Drs. Wilmer Krusen and George Erety Shoemaker, Philadelphia, and closed by Dr. Tracy.

Dr. W. H. Cameron, Pittsburgh, announced the postponement of the dinner for the women physicians until 6:30 P.M. He announced that the Pennsylvania Railroad representative would be at the registration bureau from 9 until 12 o'clock, Thursday. He urged the members to inspect the exceptionally instructive pathologic exhibit. The exhibitors, he also urged, should be favored by a visit and inspection of their products.

"The Present Place of Vaginal Hysterectomy in Pelvic Disorders; Summary of Fifty Consecutive Cases" was read by Dr. George Erety Shoemaker, Philadelphia.

"The Present Status of Our Knowledge of Shock" was read by Dr. Jonathan M. Wainwright, Scranton, and discussed by Drs. Loyal W. Wilson, New Castle; Edward Martin, J. Stewart Rodman, Philadelphia.

"Resume of Surgery of the Mammary Gland Occurring in My Practice during the Past Fifteen Years" was read by Dr. William L. Rodman, Philadelphia, and discussed by Drs. G. B. Eusterman, Rochester, Minn.; Charles E. Taylor, Irwin; John B. Carnett, Philadelphia, and closed by Dr. Rodman.

"Traumatic Rupture of the Intestines" by Dr. Walter Lathrop, Hazleton, was read by Dr. John B. Carnett, Philadelphia, in the absence of Dr. Lathrop, and was discussed by Drs. Hugh E. McGuire, Pittsburgh; Loyal W. Wilson, New Castle, and W. L. Estes, South Bethlehem.

"Local Anesthesia, with Special Reference to Nerve Blocking" was read by Dr. Penn G. Skillern, Philadelphia, and discussed by Drs. Harvey F. Smith, Harrisburg; J. Torrance Rugh, Philadelphia, and closed by Dr. Skillern.

Adjourned until Thursday, September 24, at 9:30 A.M.

THURSDAY MORNING, SEPTEMBER 24, 1914.

The Section was called to order at 9:30 A.M., by the Chairman, Dr. J. Torrance Rugh. The minutes of the preceding meeting were read and approved. On motion of Dr. J. M. Baldy, Philadelphia, duly seconded, the Section took a recess until 10 o'clock, which seemed necessary because of the difficulty in getting into the Institute before that hour.

"The Lateral Repair of a Lateral Tear of the Perineum" was read by Dr. W. Rowland Davies, Scranton.

"The Correlation of Appendicitis and Other Abdominal Affections" was read by Dr. Levi Jay Hammond, Philadelphia, and discussed by Dr. Edward Martin, Philadelphia, and closed by Dr. Hammond.

"Cesarean Section" by Dr. Edward P. Davis, Philadelphia, was read by Dr. J. M. Baldy, Philadelphia, in the absence of Dr. Davis.

"Indications for Cesarean Section" was read by Dr. Harold A. Miller, Pittsburgh.

The preceding two papers were discussed by Drs. James R. Freeland, Thomas B. Carroll, Charles E. Ziegler, John J. Rectenwald, Frederick A. Rhodes, Pittsburgh; G. W. Boyd, William E. Parke, J. M. Baldy, Philadelphia; Albert J. Winebrake, Scranton, and closed by Dr. Miller.

"Blood Pressure, Prenatal" by Dr. John Cooke Hirst, Philadelphia, was read by title.

"The Conservative Treatment of Fracture of the Femur" was read by Dr. Edward Martin, Philadelphia, and discussed by Drs. William L. Estes, South Bethlehem; John B. Lowman, Johnstown, and closed by Dr. Martin.

"X-Ray Study of the Pituitary Body with Especial Reference to Epilepsy" was read by Dr. George C. Johnston, Pittsburgh, and discussed by Drs. T. M. T. McKennan, Charles H. Henninger, Pittsburgh; Frank D. Kilgore, Harrisburg, and William F. Guilfoyle, Philadelphia.

"Acute Surgical Metastatic Infections with Especial Reference to Bones, Joints, and Periarticular Structures" was read by Dr. Nathaniel Ginsburg, Philadelphia, and discussed by Drs. Edward Martin and J. Torrance Rugh, Philadelphia.

Section adjourned *sine die.*

J. Torrance Rugh, Chairman.

Levi Jay Hammond, Acting Secretary.

MINUTES OF THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

TUESDAY AFTERNOON, SEPTEMBER 22, 1914.

The Section on Eye, Ear, Nose and Throat Diseases convened in the Rehearsal Room of the Carnegie Institute, Pittsburgh, and was called to order at 2 P.M., by the Chairman, Dr. Howard F. Hansell, Philadelphia.

Dr. Hansell then resigned his chair to Dr. Edward Stieren, Pittsburgh, and delivered his address on "Extraction of Cataract in Capsule by Stanculeanu Method."

Cases of "Bullous Keratitis, Glaucoma, Epithelioma, Foreign Body in the Vitreous" and lantern Slides of "Orbital Abscess, Melanotic Sarcoma and Skin Grafts" were presented by Dr. Edward B. Heckel, Pittsburgh.

A case report of "Glaucoma in a Young Myope with Atrophy of the Iris, and Bullous Keratitis" was read by Dr. Edward Stieren, Pittsburgh, who afterward presented a case of "Bilateral Congenital Cataract" and another of "Ectropion."

A case of "Congenital Malformation of the Cornea" was presented by Dr. Edward A. Weisser, Pittsburgh.

A case of "Ocular Injury" was presented by Dr. Joseph E. Willetts, Pittsburgh.

Three case reports of "Lateral Sinus Thrombosis" were read by Dr. William P. Barndollar, Pittsburgh, who afterward exhibited two of the patients.

The preceding papers and cases were discussed by Drs. C. P. Franklin, Philadelphia; F. C. Stahlman, Charleroi; H. F. Pyfer, Norristown, and closed by Dr. Barndollar.

Adjourned until Wednesday, September 23, at 2 P.M.

WEDNESDAY AFTERNOON, SEPTEMBER 23, 1914.

The Section was called to order at 2 P.M., by the Chairman, Dr. Howard F. Hansell. The minutes of the previous meeting were read and approved.

The Executive Committee reported the following nominations for the ensuing year: Chairman, Dr. Robert Milligan, Pittsburgh; Secretary, Dr. John F. Culp, Harrisburg. Both were unanimously elected.

Dr. William Campbell Posey, as chairman of the Commission on the Conservation of Vision, presented a report which, on motion of Dr. S. D. Risley, Philadelphia, was received and the recommendations approved.

"Borderline Topics in Ophth-Oto-Laryngology" was read by Dr. Joseph C. Beck, Chicago, and discussed by Drs. L. Leo Doane, Butler; John F. Culp, Harrisburg, and closed by Dr. Beck. On motion of Dr. Wendell Reber, Philadelphia, a rising vote of thanks was given Dr. Beck.

"Thrombosis of Lateral Sinus with Report of Four Cases" was read by Dr. John R. Simpson, Pittsburgh, and discussed by Drs. Ewing W. Day, Pittsburgh; George B. Jobson, Jr., Franklin; J. C. Beck, Chicago, and closed by Dr. Simpson:.

"Trifacial Neuralgia from Nasal Trouble" was read by Dr. George B. Jobson, Jr., Franklin, and discussed by Drs. C. H. Henninger, Pittsburgh; John F. Culp, Harrisburg; C. M. Harris, Johnstown; Howard F. Pyfer, Norristown; J. C. Beck, Chicago; Wendell Reber, Philadelphia, and closed by Dr. Jobson.

"Some Types of Congenital Cataract and Their Management" was read by Dr. William Campbell Posey, Philadelphia, and discussed by Drs. Edward Stieren, Adolph Krebs, Pittsburgh; Wendell Reber, H. F. Hansell, Philadelphia; N. S. Weinberger, Sayre, and closed by Dr. Posey.

"On the Indications for Operation for Strabismus" was read by Dr. Wendell Reber, Philadelphia, and discussed by Dr. Howard F. Hansell, Philadelphia, and closed by Dr. Reber.

"Roentgen Ray Examination of the Accessory Sinuses of the Nose" was read by Dr. Willis F. Manges, Philadelphia, and discussed by Drs. George C. Johnston, Pittsburgh, and H. F. Pyfer, Norristown.

Adjourned until Thursday, September 24, at 9:30 A.M.

THURSDAY MORNING, SEPTEMBER 24, 1914.

The Section was called to order at 9:30 A.M., by the Chairman, Dr. Howard F. Hansell. The minutes of the preceding meeting were read and approved.

"Primary Carcinoma of the Tonsil with Report of Two Cases" was read by Dr. John B. McMurray, Washington, and discussed by Drs. G. C. Kneedler, Pittsburgh; H. F. Pyfer, Norristown, and closed by Dr. McMurray.

"Relation of Foreign Bodies within the Eyeball and in the Orbit" was read by Dr. John C. McAllister, Ridgway, and discussed by Drs. W. W. Blair, E. B. Heckel, Edward Stieren, Pittsburgh; William M. Sweet, S. D. Risley, Philadelphia, and closed by Dr. McAllister.

"The Significance of Increase of Tension of the Eyeball" was read by Dr. Samuel D. Risley, Philadelphia, and discussed by Drs. E. B. Heckel, Pittsburgh; G. B. Jobson, Jr., Franklin, and closed by Dr. Risley.

"Some Methods and Devices in the Correction of the Nasal Septum That Make for Success" was read by Dr. George Morley Marshall, Philadelphia, and discussed by Dr. H. F. Pyfer, Norristown, and closed by Dr. Marshall.

On motion of Dr. S. D. Risley, a vote of thanks was tendered the retiring officers of the Section for the efficient and capable manner in which the program was prepared and the meeting conducted.

The minutes were read and approved.

Section adjourned *sine die.*

Howard F. Hansell, Chairman.

Clarence M. Harris, Secretary.

MINUTES OF THE CONFERENCE OF SECRETARIES.

The Ninth Annual Banquet and Conference of the Secretaries of the Component Societies of the Medical Society of the State of Pennsylvania was held at the University Club, Pittsburgh, Tuesday evening, September 22, 1914, Dr. H. H. Whitcomb, Norristown, presiding. The minutes of the 1913 Conference, as printed in the JOURNAL, October, 1913, were read and approved.

Greetings and regrets were received from Dr. J. Howard Anderson, secretary of the West Virginia State Medical Association, and Dr. Luther B. Kline, secretary of the Columbia County Society.

The Conference was addressed by Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., editor of the *Journal of the Indiana State Medical Association;* and Dr. J. H. J. Upham, Columbus, Ohio, president of the Ohio State Medical Association.

The committee, consisting of Drs. H. W. Gass and J. J. Coffman, appointed at the 1913 meeting, to provide for the order of business, the expenses of the secretary for the Conference, and to report regarding the inclusion of the editors at the Conference, reported the following, which were adopted:—

ORDER OF BUSINESS.

Call to order by chairman.
Reading of minutes.
Calling roll of secretaries.
Reading of communications.
Reports of committees, standing and special, and appointment of Nominating Committee.
New business.
Program as arranged by Executive Committee.
Banquet.
After dinner speeches.
Report of Nominating Committee.

The expenses of the secretary of the Conference of Secretaries, being only what is actually needed in the necessary correspondence in providing for the program and in the arrangements for the annual meeting, this should be met and paid for by the Trustees of the State Society or taken from the moneys donated for the use of the Conference of the Secretaries for the annual meeting.

In consideration of their influence for good to the local and state organizations, the Conference of the Secretaries would appreciate the favor if the State Society will include the editors of the bulletins, who are not also secretaries, in the invitations to the annual meeting and banquet of the Conference of the Secretaries.

On motion the following was passed: That the secretaries and editors attending the meeting of the Conference of Secretaries be assessed one dollar and the deficit be paid by the State Society for the banquet of 1915.

The Chairman appointed a Nominating Committee, consisting of Drs. Norman C. Mills, Big Run, and Myers W. Horner, Mt. Pleasant, to nominate officers for the ensuing year.

The Nominating Committee recommended officers to serve during the coming year, who were elected as follows: Dr. H. H. Whitcomb, Norristown, Chairman; Dr. Frank D. Kilgore, Harrisburg, Vice Chairman; Dr. J. Treichler Butz, Allentown, Secretary-Treasurer.

Adjourned to Banquet Hall.

After dinner speeches were made by Drs. Alexander R. Craig, Chicago; William L. Rodman, Philadelphia; Edward B. Heckel, Pittsburgh; William T. Sharpless, West Chester; William L. Estes, South Bethlehem; Thomas D. Davis, Pittsburgh; and Philip Marvel, Atlantic City, N. J.

Those present were: Drs. W. L. Rodman, Philadelphia, and A. R. Craig, Chicago, president and secretary of the A. M. A.; Albert E. Bulson, Jr., Fort Wayne, Ind.; J. H. J. Upham, Columbus, Ohio, C. D. Selby, Toledo, Ohio, secretary-treasurer and editor of the *Journal* of the Ohio State Medical Association; Philip Marvel, Atlantic City, N. J.; Edward B. Heckel, Pittsburgh, president, W. H. Cameron, Pittsburgh, assistant secretary, T. D. Davis, Pittsburgh, T. B. Appel, Lancaster, W. L. Estes, South Bethlehem, A. P. Hull, Montgomery, W. T. Sharpless, West Chester, and F. L. VanSickle, Olyphant, trustees of the State Society; and the following secretaries of county societies: Drs. I. L. Ohlman, C. J. Vaux, Allegheny County; J. B. F. Wyant, Armstrong County; B. B. Snodgrass, Beaver County; C. L. Stevens, Bradford County; H. J. Cartin, Cambria County; Joseph Scattergood, Chester County; L. F. Stewart, Clearfield County; C. C. Laffer, Crawford County; S. G. Logan, Elk County; S. D. Gleeten, Erie County; J. P. Ritenour, Fayette County; N. C. Mills, Jefferson County; H. W. Albertson, Lackawanna County; H. C. Kinzer, Lancaster County; W. A. Womer, Lawrence County; J. Treichler Butz, Lehigh County; E. U. Buckman, Luzerne County; R. F. Trainer, Lycoming County; James Johnston, McKean County; P. E. Biggins, Mercer County; C. S. Flagler, Monroe County; H. H. Whitcomb, E. S. Buyers, Montgomery County; W. H. Gass, Northumberland County; H. C. McKinley, Somerset County; A. E. Thompson, Washington County; M. W. Horner, Westmoreland County. Mr. George V. Sheridan, Columbus, Ohio, was also present.

Adjourned at 8 P.M.

H. H. Whitcomb, Norristown, Chairman.
J. Treichler Butz, Allentown, Secretary.

OFFICERS AND COMMITTEEMEN FOR THE YEAR 1914-1915.

President: Edward B. Heckel, Jenkins Bldg., Pittsburgh.

President Elect: John B. McAlister, 234 N. Third St., Harrisburg.

Vice Presidents: First—G. Franklin Bell, Newberry; Second—Walter S. Stewart, Wilkes-Barre; Third—Jacob R. Lehman, Mountville; Fourth—Otto C. Gaub, Pittsburgh.

Secretary: Cyrus Lee Stevens, Athens. Assistant Secretary: William H. Cameron, Box 54, Oakland Sta., Pittsburgh.

Treasurer: George W. Wagoner, 435 Franklin St., Johnstown.

Trustees and Councilors:

William L. Estes, Chairman, 805 Delaware Ave., South Bethlehem. Term Expires, 1916.

Theodore B. Appel, Lancaster,	Term Expires, 1916	William T. Sharpless, West Chester,	Term Expires, 1917
Horatio W. Gass, Sunbury,	" " 1916	Frederick L. VanSickle, Olyphant,	" " 1917
Thomas D. Davis, Pittsburgh,	" " 1915	Alem P. Hull, Montgomery,	" " 1917
W. Albert Nason, Roaring Spring,	" " 1915	Edward B. Heckel, Pittsburgh,	*Ex-officio.*
James Johnston, Bradford,	" " 1915	Cyrus Lee Stevens, Athens,	*Ex-officio.*

Committee on Scientific Work:

Henry D. Jump, *Chairman*, 4634 Chester Ave., Philadelphia.
Edward B. Heckel, Pittsburgh.
Cyrus Lee Stevens, Athens.
William H. Cameron, Pittsburgh.
J. Torrance Rugh, Philadelphia.

And the Section Officers as Follows:

Medicine—Thomas G. Simonton, *Chairman*, Pittsburgh; J. Wesley Ellenberger, *Secretary*, Harrisburg.
Surgery—Floyd E. Keene, *Chairman*, Philadelphia; A Ralston Matheny, *Secretary*, Pittsburgh.
Specialties—Robert Milligan, Chairman, Pittsburgh, John F. Culp, *Secretary*, Harrisburg.

Committee on Public Policy and Legislation:

Wilmer Krusen, *Chairman*, 127 N. Twentieth St., Philadelphia, 1917.
Adolph Koenig, Pittsburgh, 1916.
Frank G. Hartman, Lancaster, 1915.
Edward B. Heckel, Pittsburgh.
Cyrus Lee Stevens, Athens.

COMMITTEE ON SOCIETY COMITY AND POLICY:

George W. Guthrie, *Chairman,* 109 S. Franklin St., Wilkes-Barre, 1919.
Cyrus Lee Stevens, Athens, 1918.
Walter H. Brown, Richlandtown, 1917.
Alfred Stengel, Philadelphia, 1916.
John H. Murray, Punxsutawney, 1915.

COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION:

Samuel G. Dixon, *Honorary Chairman,* Harrisburg.
J. Wesley Ellenberger, *Chairman,* 922 N. Third St., Harrisburg, 1919.
Elizabeth Leiper Martin, Pittsburgh, 1918.
Charles H. Miner, Wilkes-Barre, 1917.
Harry H. Whitcomb, Norristown, 1916.
Albert M. Eaton, Philadelphia, 1915.

COMMITTEE ON MEDICAL BENEVOLENCE:

William S. Wray, *Chairman,* 2007 Chestnut St., Philadelphia.
Edward B. Heckel, Pittsburgh.
William T. Sharpless, West Chester.
George W. Wagoner, Johnstown.
Cyrus Lee Stevens, Athens.

COMMITTEE ON ARRANGEMENTS:

J. Torrance Rugh, *Chairman,* 1616 Spruce St., Philadelphia.
(The other members to be selected later by the Philadelphia County Medical Society.)

PRESS COMMITTEE:

J. Torrance Rugh, *Chairman,* 1616 Spruce St., Philadelphia.
William H. Cameron, Pittsburgh.
Cyrus Lee Stevens, Athens.

MEMBERS, HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION:

DELEGATES.	Term Expires.	ALTERNATES DESIGNATE.	Term Expires.
Americus R. Allen, Carlisle	1915	Philip Y. Eisenberg, Norristown	1915
J. Montgomery Baldy, Philadelphia	1915	Wilmer Krusen, Philadelphia	1915
Herbert B. Gibby, Wilkes-Barre	1915	Lowell M. Gates, Scranton	1915
Luther B. Kline, Catawissa	1915	Rufus E. Brock, Waynesburg	1915
Adolph Koenig, Pittsburgh	1915	John D. Milligan, Pittsburgh	1915
Thomas D. Davis, Pittsburgh	1916	Edward B. Heckel, Pittsburgh	1916
Joseph D. Findley, Altoona	1916	Lewis H. Taylor, Wilkes-Barre	1916
William T. Hamilton, Philadelphia	1916	William F. Guilfoyle, Philadelphia	1916
Jesse Y. Scott, Washington	1916	Robert E. Conner, Hickory	1916
ALTERNATES AT LARGE.			
Theodore B. Appel, Lancaster	1915	Levi J. Hammond, Philadelphia	1916
John B. Carrell, Hatboro	1915	William M. Robertson, Warren	1916
John B. Lowman, Johnstown	1915	Cyrus Lee Stevens, Athens	1916
William C. Meanor, Beaver	1915	Frederick L. VanSickle, Olyphant	1916
William E. Parke, Philadelphia	1915		

DISTRICT CENSORS:

First District.—Chester County, Charles E. Woodward, West Chester; Delaware County, Daniel W. Jefferis, Chester; Philadelphia County, Milton B. Hartzell, Philadelphia.

Second District.—Bucks County, James N. Richards, Fallsington; Lehigh County, William B. Erdman, Macungie; Monroe County, Nathaniel C. Miller, Stroudsburg; Northampton County, Edgar M. Green, Easton.

Third District.—Berks County, Charles W. Bachman, Reading; Montgomery County, William McKenzie, Conshohocken; Schuylkill County, Arthur B. Fleming, Tamaqua.

Fourth District.—Dauphin County, Hiram McGowan, Harrisburg; Lancaster County, J. Henry Musser, Lampeter; Lebanon County, William M. Guilford, Lebanon.

Fifth District.—Adams County, William E. Wolff, Arendtsville; Cumberland County, Harry A. Spangler, Carlisle; Franklin County, Leslie M. Kauffman, Kauffman; York County, William F. Bacon, York.

Sixth District.—Huntingdon County, W. Hardin Sears, Huntingdon; Juniata County, William H. Banks, Mifflintown; Mifflin County, Alexander S. Harshberger, Lewistown; Perry County, Edward E. Moore, New Bloomfield.

Seventh District.—Bedford County, Edmund L. Smith, Schellburg; Fayette County, Jacob S. Hackney, Uniontown; Somerset County, Edward F. Hemminger, Meyersdale; Westmoreland County, Robert L. Wilson, Jeannette.

Eighth District.—Allegheny County, Elmer E. Wible, Pittsburgh; Greene County, R. Edward Brock, Waynesburg; Washington County, William R. Thompson, Washington.

Ninth District.—Beaver County, Theodore P. Simpson, Beaver Falls; Lawrence County, Robert G. Miles, New Castle; Mercer County, Clarence W. McElhaney, Greenville.

Tenth District.—Crawford County, Winters D. Hamaker, Meadville; Erie County, David H. Strickland, Erie; Warren County, William M. Robertson, Warren.

Eleventh District.—Elk County, Clarence G. Wilson, St. Marys; McKean County, A. Miner Straight, Bradford; Potter County, Elwin H. Ashcraft, Coudersport.

Twelfth District.—Butler County, M. Edward Headland, Butler; Clarion County, David L. McAninch, Lamartine; Venango County, James B. Siggins, Oil City.

Thirteenth District.—Armstrong County, Charles J. Jessop, Kittanning; Indiana County, Luther S. Clagett, Blairsville; Jefferson County, Spencer M. Free, Dubois.

Fourteenth District.—Clinton County, Joseph M. Corson, Chatham Run; Lycoming County, Alem P. Hull, Montgomery; Tioga County, Lewis Darling, Lawrenceville; Union County, Thomas C. Thornton, Lewisburg.

Fifteenth District.—Blair County, Joseph D. Findley, Altoona; Cambria County, William D. Haight, Johnstown; Center County, James L. Seibert, Bellefonte; Clearfield County, Ward O. Wilson, Clearfield.

Sixteenth District.—Bradford County, Charles M. Woodburn, Towanda; Sullivan County, Arthur J. Bird, Overton; Susquehanna County, Edward R. Gardner, Montrose; Wyoming County, Herbert L. McKown, Tunkhannock.

Seventeenth District.—Columbia County, Luther B. Kline, Catawissa; Montour County, Robert S. Patten, Danville; Northumberland County, Henry T. Simmonds, Shamokin; Snyder County, Charles N. Brosius, Shamokin Dam.

Eighteenth District.—Carbon County, John W. Luther, Palmerton; Lackawanna County, John D. Wilson, Scranton; Luzerne County, Elmer L. Meyers, Wilkes-Barre; Wayne County, William T. McConvill, Honesdale.

MEMBERS OF THE HOUSE OF DELEGATES ANSWERING TO ROLL CALL.

Allegheny County Society.—John A. Hawkins, President; John W. Boyce, William T. Burleigh, William M. Campbell, Amos W. Colcord, Thomas D. Davis, Adolph Koenig, Adolph Krebs, John D. Milligan, Ellis S. Montgomery, K. Isadore Sanes, William M. Woodward.

Armstrong County Society.—Charles J. Steim.

Beaver County Society.—George J. Boyd, President; Walter H. Herriott.

Berks County Society.—John W. Kauffman, President; Israel Cleaver, Ira G. Shoemaker.

Blair County Society.—Samuel C. Smith.

Bradford County Society.—Nelson S. Weinberger.

Bucks County Society.—William C. LeCompte, President; John B. Carrell.

Cambria County Society.—Benton E. Longwell, President; Daniel S. Rice.

Carbon County Society.—Alexander Armstrong.

Center County Society.—James L. Seibert.

Chester County Society.—Joseph Scattergood.

Clarion County Society.—David L. McAninch.

Clearfield County Society.—James A. Miller.

Crawford County Society.—Cornelius C. Laffer, Secretary; John K. Roberts.

Cumberland County Society.—Harry A. Spangler.

Dauphin County Society.—John F. Culp, President; Harvey F. Smith, John Oenslager, Jr.

Elk County Society.—Samuel G. Logan, Secretary.

Erie County Society.—George W. Schlindwein, President; Wallace R. Hunter.

Fayette County Society.—William J. McGregor.

Franklin County Society.—A. Barr Snively.

Greene County Society.—Frank Sellers Ullom, President.

Huntingdon County Society.—James P. Brallier.

Indiana County Society.—William B. Ansley, President; Albert T. Rutledge.

Jefferson County Society.—Norman C. Mills, Secretary; John H. Murray.

Lackawanna County Society.—Charles Falkowsky, Jr., President; W. Rowland Davies, Frederick L. VanSickle.

Lancaster County Society.—Horace C. Kinzer, Secretary; Frank G. Hartman, A. C. Treichler.

Lawrence County Society.—William A. Womer.

Lehigh County Society.—J. Treichler Butz, Secretary; Frederick A. Fetherolf.

Luzerne County Society.—Delbert Barney, President; Lewis H. Taylor, Herbert B. Gibby.

Lycoming County Society.—Robert F. Trainer, Secretary; Edward Lyon, Joseph W. Albright.

McKean County Society.—James Johnston, Secretary; William P. Burdick.

Mifflin County Society.—Charles J. Stambaugh.

Monroe County Society.—Charles S. Flagler, Secretary.

Montgomery County Society.—Harry H. Whitcomb, Secretary; Elmer G. Kriebel.

Montour County Society.—James S. Hammers.

Northampton County Society.—Delbert K. Santee.

Northumberland County Society.—Horatio W. Gass, Secretary.

Perry County Society.—Lenus A. Carl.

Philadelphia County Society.—William D. Robinson, President; Herman B. Allyn, J. Montgomery Baldy, Thomas R. Currie, Clarence P. Franklin, Nathaniel Ginsburg, William F. Guilfoyle, William T. Hamilton, Frank C. Hammond, Levi Jay Hammond, William S. Higbee, Wilmer Krusen, Arthur C. Morgan, William E. Parke, Alice M. Seabrook, Stephen E. Tracy.

Schuylkill County Society.—William T. Williams.

Somerset County Society.—George C. Berkheimer, President.

Venango County Society.—Harry F. McDowell, President.

Warren County Society.—Harry W. Mitchell.

Washington County Society.—William D. Teagarden, President; William D. Martin, Alexander Nelson Booth.

Westmoreland County Society.—Edward M. Clifford, Bert Frank Ober.

Wyoming County Society.—William W. Lazarus.

York County Society.—J. Nelson Dunnick, President; Horace M. Alleman, James C. May.

Edward B. Heckel, President.

NONVOTING MEMBERS.

C. L. Stevens, Secretary; George W. Wagoner, Treasurer; W. Albert Nason, William T. Sharpless, Alem P. Hull, William L. Estes, Theodore B. Appel, Trustees.

MEMBERS IN ATTENDANCE AT THE SESSION IN PITTSBURGH, SEPTEMBER 21, 22, 23, AND 24, 1914.

SECTION ON MEDICINE.

Adams County Society.—D. LeR. Merriman, Arendtsville.

Allegheny County Society.—C. S. Allison, Ambridge (Beaver Co.); C. H. Smith, Arnold (Westm. Co.); J. W, Beyer, Aspinwall; J. S. Kelso, C. L. Lutz, Avalon; T. A. Miller, D. W. Seville, J. C. Welch, H. E. Woelfel, Bellevue; C. C. Croft, Ben Avon; G. E. Bair, P. C. Cope, J. C. Hartman, Jr., A. J. Korhnak, S. R. Mills, J. C. Nicholls, Braddock; D. M. Davis, Broughton; J. C. Caldwell, Butler (Butler Co.); W. J. Connelly, J. H. McKee, Carnegie; A. H. Kraft, Carrick; J. C. Greenfield, Clairton; E. M. Hand, W. S. Ramsey, Coraopolis; H. I. Crawford, E. E. Taylor, Crafton; L. H. Halpert, W. C. Hocking, C. F. Keyser, S. S. Landis, Duquesne; R.D. Goodwin, E. Pittsburgh; J. F. Hufford, Elrama (Wash. Co.); J. L. McBride, Emsworth; C. A. Dillon, Etna; R. M. Heath, Fair Haven; W. E. Hodgson, Glassport; W. B. Ray, Glenshaw; A. C. Davis, Hites; C. W. Allen, J. L. Foster, Hoboken; H. De La Cossitt, W. E. Lawson, J. Purman, D. Reiter, O. B. Steinmetz, Homestead; J. S. Crawford, W. C. Wallace, Ingram; J. R. McQuaid, Leetsdale; E. E. Evans, R. S. Hinchman, W. F. Knox, W. T. Miller, A. G. Sandblad, J. W. Stevenson, N. Sunstein, W. V. M. Taylor, McKeesport; G. S. Bubb, C. L. McKinnon, McKees Rocks; J. F. McCullough, Mars; G. B. C. Elliott, A. K. Lyon, Millvale; J. F. McNeely, Munhall; A. S. Kaufman, E. N. Piper, New Kensington (Westm. Co.); C. B. Denny, F. W. Mathewson, Oakdale; C. J. Aaron, D. N. Ahlstrom, N. Albrecht, I. H. Alexander, G. C. Anderson, L. F. Ankrim, C. S. Apgar, J. I. Armstrong, S. Ayres, G. R. Baalith, J. A. Baird, J. T. Baltrusaitis, J. H. Barach, A. W. Barkley, H. A. Barnhardt, H. J. Benz, H. Bernstein, C. C. Bippus, J. L. Black, E. L. Blair, S. Bloomberg, W. C. Bode, R. H. Boggs, B. A. Booth, D. C. Boyce, J. W. Boyce, J. A. Boyd, S. S. Brown, J. G. Burke, W. T. Burleigh, P. W. Bushong, M. C. Cameron, W. H. Cameron, C. L. Campbell, S. S. Carrier, W. A. Cave, W. H. Caskey, W. B. Cathcart, H. E. Clark, W. A. Clark, R. C. Clarke, T. P. Cochran, B. A. Cohoe, Gaetano Conti, Giacomo Conti, J. M. Conway, A. R. Cratty, A. W. Crozier, O. T. Cruikshank, C. L. Curll, A. S. Daggette, T. D. Davis, T. Diller, B. E. Dornbush, C. A. Duffy, J. P. Duggan, P. J. Eaton, J. F. Edwards, J. E. Eisenhart, O. N. Eisaman, T. J. Elterich, K. A. Emmerling, D. R. Evans, J. K. Everhart, W. B. Ewing, S. K. Fenollosa, J. J. Ferner, H. M. Fink, H. Finkelpearl, H. H. Fisher, H. C. Flood, E. N. Foster, W. S. Foster, R. S. Freed, E. M. Frost, H. D. Fulton, L. C. Fulton, S. George, M. J. Gihans, W. M. Gill, M. Goldsmith, J. E. Gould. M. A. Gould, W. G. Graham, T. W. Grayson, J. Grekin, G. W. Grier, P. B. Grogin, H. Groth, W. H. Guy, O. C. Hagmeier, H. M. Hall, Jr., W. E. Hallock, W. M. Hamilton, C. C. Hartman, C. H. Hayes, G. L. Hays, S. R. Haythorn, T. L. Hazlett, L. H. Hector, J. P. Hegarty, C. H. Henninger, C. C. Hersman, A. V. Hicks, J. Hodgkiss, J. H. Hoffmann, J. F. Holt, A. J. Hopkins, S. McK. Howell, A. D. Husted, J. D. Iams, T. G. Jenny, S. H. Johnson, J. I. Johnston, C. R. Jones, W. W. Jones, M. B. Katzenstein, F. M. Kern, F. Kenworthy, T. T. Kirk, O. Klotz, A. Koenig, L. Lasday, J. P. Laughlin, W. H. Lehner, M. B Lichtenstein, J. A. Lichty, C. E. Lindeman, J. G. Linn, L. Litchfield, P. M. Lloyd, J. H. Long, S. F. Lyon, C. B. McAboy, E. C. McAdams, W. P. McCorkle, J. C. McCormick, W. McCracken, E. B. McCready, R. J. McCready, W. W. McFarland, A. C. McGeagh, D. B. McIntire, M. S. McKennan, T. M. T. McKennan, S. H. McKibben, T. M. McLenahan, S. N. McNaugher, G. W. McNeil, C. P. Macdonald, C. B. Maits, E. C. Mallison, S. J. Marcus, O. L. Marks, C. C. Marshall, C. S. Marshall, D. B. W. Martin, E. G. Matson, E. E. Mattox, W. C. Maxwell, E. E. Mayer, W. H. Mayer, F. B. Miller, L. O. Miller, O. L. Miller, S. C. Milligan, A. F. B. Morris, I. J. Moyer, R. P. Moyer, J. R. Munford, M. A. Naylor, T. G. Nelan, J. C. Ohail, C. T. Osterloh, C. L. Palmer, H. B. Patterson, A. Pettit, J. W. Phillips, S. N. Pool, H. T. Price, F. Proescher, G. W. Rall, R. C. Rasin, H. M. Rauch, J. F. Rickenbach, J. L. Robertson, W. H. Rodgers, J. Rosenbloom, J. McD. Russell, T. M. Ryall, L. Sadowski, R. M. Sands, J. J. Schill, F. A. Schlanger, H. G. Schleiter, G. S. Schoyer, F. M. Schrack, L. L. Schwartz, W. G. Shallcross, J. B. Shepard, A. W. Sherrill, C. W. Shirey, D. L. Simon, T. G. Simonton, L. M. Smith, R. P. Smith, H. M. Snitzer, A. M. Stanton, O. T. Staufft, J. L. Steffy, C. J. Stybr, J. Stybr, W. A. Terheyden, S. W. Tufts, G. G. Turfley, T. Turnbull, Jr., F. B. Utley, D. W. Vaux, G. H. Vaux, J. R Vincent, W. K. Walker, G. W. Walters, E. S. Welmer, M. H. Weinberg, W. H. Wesley, W. C. White, I. B. Whitehead, C. C. Wholey, H. L. W. Wignall, E. W. Willetts, I. Williams, J. A. Williams, R. Williams, J. M. Wilson, J. Wolf, B. B. Wood, W. A. Woodburn, E. B. Woods, J. W. Worrell, G. J. Wright, J. H. Wright, H. W. Wuerthele, W. A. Wycoff, S. Zabarenko, E. Zugsmith, E. W. ZurHorst, Pittsburgh; M. R. Feitwell, E. L. Martin, DeW. B. Nettleton, J. Walters, Sewickley; N. R. Graham, W. J. McGeary, C. C. Stanton, Sharpsburg; M. L. Glenn, H. W. Morrow, W. T. Pyle, L. N. Smith, C. K. Wagener, Swissvale; V. Z. Allison, W. A. Arnold, C. L. Leydic, S. F. McComb, C. S. Orris, J. C. Smith, Tarentum; A. M. Pierce, West Elizabeth; J. S. Cadwalader, Wexford; R. W. Allison, J. M. Anderson, J. V. Ballantyne, D. B. Beggs, S. A. Dawson, G. D. Engle, W. M. Findley, E. P. Gray, W. W. Jones, J. D. McClure, H. S. McClymonds, T. E. McMurray, B. H. Patterson, J. E. Rigg, F. R. Stotler, W. L. Thunhurst, J. H. Whitcraft, Wilkinsburg; S. E. Nowry, Wilmerding; J. F. Scott, J. B. D. Stewart, Wilson; R. L. Hill, Woodville.

Armstrong County Society.—G. S. Morrow, Dayton; W.

S. McCreight, Elderton; A. E. Bower, Ford City; W. H. McCafferty, C. M. McLaughlin, Freeport; J. T. Deemar, R. Deemar, F. C. Monks, R. F. Tarr, J. B. F. Wyant, Kittanning; T. F. Stockdale, Rural Valley.

Beaver County Society.—J. D. Stevenson, Aliquippa; W. C. Arthur, A. N. Mellott, Ambridge; J. H. Boal, Baden; M. I. Cornelius, C. S. Strouss, Beaver; G. J. Boyd, W. F. Elliott, J. F. Gilliland, K. M. Taggart, L. S. Townsend, Beaver Falls; H. W. Nye, Enon Valley (Lawrence Co.); W. H. Herriott, Freedom; H. C. Lacy, New Brighton; M. L. McCandless, S. H. Peirsol, Jr., Rochester; H. B. Jones, J. A. Stevens, Woodlawn.

Bedford County Society.—W. F. Enfield, Bedford.

Berks County Society.—I. Cleaver, J. W. Kauffman, I. G. Shoemaker, Reading.

Blair County Society.—R. T. Eldon, J. H. Galbraith, R. J. Hillis, A. L. Spanogle, Altoona; S. C. Smith, Hollidaysburg.

Bucks County Society.—J. B. Carrell, Hatboro (Montg. Co.); W. H. Brown, Richlandtown.

Butler County Society.—J. H. McClelland, Argentine; J. C. Atwell, C. H. Ketterer, J. D. Purvis, B. L. Ramsey, H. P. St. Clair, A. H. Ziegler, Butler.

Cambria County Society.—F. C. Jones, Ebensburg; A. F. Akers, Gallitzin; H. H. Penrod, H. F. Tomb, Johnstown.

Carbon County Society.—W. P. Long, Weatherly; A. Armstrong, White Haven (Luzerne Co.).

Center County Society.—J. L. Seibert, Bellefonte.

Chester County Society.—J. Scattergood, W. T. Sharpless, West Chester.

Clarion County Society.—J. T. Rimer, Clarion; C. V. Hepler, Hawthorn; D. L. McAninch, Lamartine; A. J. Hepler, E. K. Shumaker, New Bethlehem; J. B. Miller, Sligo.

Clearfield County Society.—H. O. King, Curwensville; J. A. Miller, Grampian.

Clinton County Society.—J. M. Corson, Chatham Run.

Columbia County Society.—J. E. Shuman, Bloomsburg.

Crawford County Society.—G. E. Humphrey, Cambridge Springs; H. D. Baird, Cochranton; C. C. Laffer, J. K. Roberts, Meadville.

Cumberland County Society.—H. A. Spangler, Carlisle.

Dauphin County Society.—J. W. Ellenberger, D. S. Funk, J. B. McAlister, J. Oenslager, Jr., Harrisburg; E. S. Everhart, Lemoyne; W. P. Evans, DeW. C. Laverty, Middletown.

Elk County Society.—H. H. Smith, Johnsonburg; S. G. Logan, Ridgway.

Erie County Society.—J. Ackerman, G. T. Barrett, M. A. Judge, A. M. Schrade, Erie; H. M. Wishart, North East.

Fayette County Society.—J. W. Gordon, N. B. Lowman, Belle Vernon; S. G. McCune, Connellsville; N. L. Kerr, Everson; A. K. Odhert, Fairchance; D. H. Sangston, McClellandtown; W. J. McGregor, Mt. Braddock; J. M. Jackson, New Salem; D. D. Brooks, Normalville; W. H. Means, Percy; W. T. Messmore, Smithfield; L. S. Gaddis, A. S. Hagan, S. E. Hibbs, E. R. Rasely, C. H. Smith, Uniontown.

Franklin County Society.—J. C. Gilland, C. M. McLaughlin, Greencastle; J. Enniss, P. D. Hoover, W. C. Schultz, A. B. Snively, Waynesboro.

Greene County Society.—E. W. Laidley, Carmichaels; L. S. McNeely, Kirby; F. S. Ullom, Waynesburg.

Huntingdon County Society.—G. G. Harman, Huntingdon; W. J. Campbell, Mt. Union; J. M. Keichline, Jr., Petersburg.

Indiana County Society.—L. S. Clagett, Blairsville; R. McE. Alexander, Bolivar (Westm. Co.); C. M. Smith, Plumville.

Jefferson County Society.—N. C. Mills, Big Run; J. G. Steiner, Knoxdale; R. L. Young, Ludlow (McKean Co.); S. M. Beyer, J. H. Murray, T. R. Williams, Punxsutawney.

Lackawanna County Society.—H. W. Albertson, C. Falkowsky, Jr., Scranton.

Lancaster County Society.—A. C. Treichler, Elizabethtown; F. G. Hartman, H. C. Kinzer, Lancaster; W. J. Leaman, Leaman Place.

Lawrence County Society.—L. H. Gageby, R. A. Wallace, W. A. Womer, New Castle; E. U. Snyder, Portersville (Butler Co.).

Luzerne County Society.—D. Barney, Wilkes-Barre.

Lycoming County Society.—A. P. Hull, Montgomery; R. F. Trainer, Williamsport.

McKean County Society.—James Johnston, H. J. Nichols, Bradford; W. P. Burdick, Kane.

Mercer County Society.—F. S. Bakewell, Greenville; M. E. MacBride, Grove City; W. W. Richardson, M. G. Yeager, Mercer; P. P. Fisher, O. A. Jones, G. W. Kennedy, Sharon; P. E. Biggins, Sharpsville; J. C. Bachop, Sheakleyville; J. F. Calvert, Sheridan (Alle. Co.).

Mifflin County Society.—S. M. Hazlett, Allensville; C. J. Stambaugh, Reedsville.

Monroe County Society.—C. S. Flagler, Stroudsburg.

Montgomery County Society.—C. R. McKinniss, Marshalsea, Boyce Sta., Pittsburgh (Alle. Co.); E. S. Buyers, H. H. Whitcomb, Norristown.

Montour County Society.—J. S. Hammers, Danville.

Northumberland County Society.—L. R. Ranck, Milton; H. W. Gass, Sunbury.

Perry County Society.—L. A. Carl, Newport.

Philadelphia County Society.—B. F. Royer, Harrisburg (Dauphin Co.); K. Schaffle, New Cumberland (Cumb. Co.); H. B. Allyn, J. H. Arnett, J. H. Austin, M. H. Fussell, W. T. Hamilton, A. Hand, Jr., A. B. Hirsh, W. C. Hollopeter, H. D. Jump, J. A. Kolmer, E. B. Krumbhaar, A. C. Morgan, M. Ostheimer, O. H. P. Pepper, J. H. W. Rhein, D. Riesman, W. E. Robertson, W. D. Robinson, J. Sailer, J. F. Sinclair, R. H. Spangler, B. F. Stahl, J. M. Taylor, T. H. Weisenburg, R. N. Willson, F. Woodbury.

Schuylkill County Society.—W. T. Williams, Mount Carmel (Northum. Co.).

Snyder County Society.—P. Herman, Kratzerville.

Somerset County Society.—C. F. Livengood, Boswell; H. P. Meyers, Confluence; R. T. Pollard, Garrett; H. C. McKinley, Meyersdale; J. R. Hemminger, Somerset.

Venango County Society.—W. G. Gilmore, Emlenton; H. F. McDowell, W. A. Nicholson, Franklin; S. W. McDowell, Pittsville; J. P. Strayer, Oil City; B. A. Black, Polk.

Warren County Society.—H. W. Mitchell, Warren.

Washington County Society.—M. F. Manning, Beallsville; A. N. Booth, Bentleysville; H. L. Snodgrass, Buffalo; G. L. McKee, Burgettstown; N. S. Veatch, California; C. L. Harsha, S. A. Lacock, A. L. Runion, C. B. Throckmorton, Canonsburg; A. O. Davis, H. J. Repman, Charleroi; C. C. Cracraft, Claysville; H. J. Kirby, Cokeburg; A. O. Hindman, Cross Creek; W. H. Cowan, W. H. Lewis, J. A. Sprowls, Donora; W. D. Martin, Dunns Station; J. B. Irwin, Florence; R. E. Conner, J. McElroy, Hickory; R. W. Wolfe, Taylorstown; L. W. Braden, Ten Mile; W. W. Weygandt, Thomas; C. T. Dodd, VanBuren; D. Beveridge, W. J. Burns, E. M. Hazlett, L. F. Kirchner, D. H. Lewis, F. I. Patterson L. D. Sargent, R. A. Stewart, C. R. Weirich, Washington; J. M. Timmons, West Alexander; H. M. Lacock, West Finley.

Westmoreland County Society.—W. M. Bortz, D. M. Easter, W. J. K. Kline, I. J. Ober, W. J. Walker, Greensburg; R. P. McClellan, Jr., R. E. L. McCormick, J. L. Marchand, Irwin; H. N. Prothero, H. J. Stauffer, R. L. Wilson, Jeannette; T. St. Clair, B. F. Ober, Latrobe; C. D. Ambrose, E. B. Dunlap, J. B. Johnson, Ligonier; H. L. Highberger, Madison; A. A. Beacom, Mammoth; C. A. Shirey, Manor; H. Inberg, I. J. Israel, Monessen; M. L. Montgomery-Marsh, Mt. Pleasant; H. W. Tittle, New Florence; N. E. Silsley, A. W. Strickler, J. P. Strickler, Scottdale; D. S. Hutton, Smithton; D. A. Walker, Southwest; W. E. Brown, T. P. Painter, United; R. H. Speer, Vandergrift.

Wyoming County Society.—W. W. Lazarus, Tunkhannock.

York County Society.—H. M. Alleman, Hanover; J. C. May, Manchester; G. W. Bahn, Spring Grove; J. N. Dunnick, Stewartstown.

SECTION ON SURGERY.

Allegheny County Society.—W. J. K. Snyder, Avalon; D. W. Cunningham, A. H. Gross, Bellevue; M. W. Heilman, Brackenridge; W. J. Lowrie, J. B. Smith, Braddock; L. J. Davis, Carnegie; L. V. L. Brown, Castle Shannon; W. P. McCulloch, Cheswick; A. W. Colcord, Clairton; H. H. Meanor, W. J. Stewart, Coraopolis; A. R. Trevaskis, East Pittsburgh; C. H. Bair, W. H. Langham, L. L. Thompson, Homestead; N. H. Bennett, Knoxville; T. S. Armstrong, M. H. Bachman, J. P. Blackburn, D. C. Huffman, J. C. Kelly, D. P. McCune, Jr., G. McK. Pierce, C. A. Rankin, H. S. VanKirk, S. L. Wiggins, W. M. Woodward, McKeesport; W. M. Campbell, C. G. Eicher, W. C. Minnich, G. R. Wycoff, McKees Rocks; J. A. Huth, Natrona; P. A. Brown, W. F. Ross, M. Snyder, New Kensington (Westm. Co.); F. B. Craig, D. B. Ludwig, Pitcairn; S. H. Adams, W. L. Allison, C. O. Anderson, J. H. Anderson, H. Arthurs, C. H. Aufhammer, T. Baker, H. F. Baumann, W. M. Beach, R. J. Behan, G. F. Berg, F. C. Blessing, F. Blume, F. W. Bode, J. M. Booher, L. C. Botkin, C. F. Boucek, D. H. Boyd, C. L. Bradford, R. E. Brenneman, J. R. Brown, W. C. Bryant, J. J. Buchanan, A. J. Buka, D. W. Cameron, T. B. Carroll, W. A. Caven, S. A. Chalfant, J. W. Clark, R. W. Clark, J. H. Collins, G. S. Cunningham, F. Davis, N. P. Davis, R. E. Davison, W. A. Dearth, H. R. Decker, W. B. Denslow, E. S. Dickey, W. T. Dodds, H. H. Donaldson, W. F. Donaldson, A. A. Dranga, C. J. Ellis, J. W. Elphinstone, G. W. Ely, T. Evans, Jr., W. G. Eyman, C. E. Fawcett, R. B. Ferree, C. S. Foster, R. J. Frodey, D. W. Frye, W. H. Glynn, W. G. Goehring, T. G. Greig, S. M. Hankey, J. A. Hawkins, E. B. Haworth, T. L. Hazzard, H. C. Hieber, L. Hirsch, W. M. Holtz, R. R. Huggins, W. P. Hughes, C. H. Ingram, D. F. Jackson, J. M. Jackson, G. C. Johnston, S. V. King, H. P. Kohberger, H. W. Kunkel, W. S. Langfitt, C. S. Lindsay, J. A. Lindsay, C. W. Lurting, E. J. McCague, W. H. McCombs, S. L. McCurdy, H. E. McGuire, W. B. McKenna, A. McKibben, G. C. McMaster, J. W. Macfarlane, A. R. Matheny, C. C. Mechling, E. W. Meredith, H. A. Miller, J. D. Milligan, E. S. Montgomery, A. I. Murphy, F. T. Nason, I. L. Ohlman, E. O. Pearson, D. G. Rafferty, J. J. Rectenwald, F. A. Rhodes, J. W. Robinson, W. H. Robinson, J. A. Ruben, D. E. Sable, W. K. T. Sahm, K. I. Sanes, C. B. Schildecker, M. Schonfield, H. A. Shaw, W. O. Sherman, G. M. Shillito, N. G. L. Shillito, H. M. Sigal, D. Silver, F. F. Simpson, S. C. Simpson, J. D. Singley, H. MacV. Smith, M. Spiro, J. N. Stanton, A. Stewart, C. A. Stillwagen, L. W. Swope, V. D. Thomas, J. M. Thorne, P. Titus, F. L. Todd, C. W. Vates, C. J. Vaux, J. O. Wallace, P. H. Walter, C. M. Watson, G. C. Weil, E. A. Weiss, X. O. Werder, E. R. Wiese, G. K. Winters, J. Witherspoon, H. R. Woods, G. A. Zieg, C. E. Ziegler, Pittsburgh; W. Anderson, Sharpsburg; H. F. Fischer, R. C. Johnston, Springdale; H. C. Diltz, J. W. Dixon, C. A. Lauffer, F. M. Storer, A. B. Wallgren, Wilkinsburg.

Armstrong County Society.—J. M. Cooley, C. J. Steim, Kittanning; D. O. Thomas, New Kensington (Westm.Co.).

Beaver County Society.—C. W. Smith, Aliquippa; C. B. Forcey, Ambridge; J. H. Wilson, Beaver; E. S. Burns, J. W. McLaughlin, G. L. McCormick, Beaver Falls; B. C. Sawyer, Darlington; A. B. Cloak, F. H. McCaskey, Freedom; H. B. Mead, New Brighton; W. J. Langfitt, Pittsburgh (Alle. Co.); H. W. Bernhardy, B. B. Snodgrass, Rochester.

Blair County Society.—C. W. Delaney, J. D. Findley, Altoona; W. A. Nason, Roaring Spring.

Bucks County Society.—W. C. LeCompte, Bristol.

Butler County Society.—C. F. Daubenspeck, Butler.

Cambria County Society.—F. U. Ferguson, Gallitzin; D. S. Rice, Hastings; P. R. Cleaver, B. E. Longwell, J. B. Lowman, W. O. Lubken, L. L. Porch, D. P. Ray, R J. Sagerson, G. W. Wagoner, Johnstown; F. J. Livingston, Salix.

Center County Society.—R. G. H. Hayes, Bellefonte.

Chester County Society.—E. Patrick, West Chester.

Clarion County Society.—B. G. Wilson, Clarion.

Clearfield County Society.—L. F. Stewart, W. O. Wilson, Clearfield.

Clinton County Society.—F. P. Ball, Lock Haven.

Crawford County Society.—W. W. Shaffer, Cochranton.

Cumberland County Society.—A. R. Allen, Carlisle.

Dauphin County Society.—H. F. Smith, Harrisburg.

Erie County Society.—J. F. Rutherford, Cranesville; J. J. Bell, G. C. Boughton, S. D. Gleeten, W. R. Hunter, G. A. Reed, A. H. Roth, D. H. Strickland, Erie.

Fayette County Society.—T. H. White, Connellsville; S. C. Dowds, Dunbar; S. H. Baum, A. E. Crow, R. H. Jeffrey, J. P. Ritenour, Uniontown.

Franklin County Society.—E. W. Palmer, Greencastle.

Greene County Society.—R. E. Brock, Waynesburg.

Huntingdon County Society.—J. P. Brallier, Alexandria; H. C. Frontz, Huntingdon; C. Campbell, Petersburg.

Indiana County Society.—A. T. Rutledge, Blairsville; B. F. Coe, Clymer; R. F. McHenry, Heilwood; H. B. Buterbaugh, G. E. Simpson, Indiana; W. B. Ansley, Saltsburg.

Jefferson County Society.—S. M. Free, Dubois (Clear. Co.); J. P. Benson, Punxsutawney.

Lackawanna County Society.—F. L. VanSickle, Olyphant; W. R. Davies, J. M. Wainwright, A. J. Winebrake, Scranton.

Lancaster County Society.—T. B. Appel, Lancaster; D. McCaskey, Witmer.

Lawrence County Society.—W. L. Campbell, J. R. Cooper, H. G. Dean, J. Foster, R. G. Miles, L. W. Wilson, New Castle.

Lehigh County Society.—F. A. Fetherolf, Allentown.

Luzerne County Society.—H. B. Gibby, G. T. Matlack, S. M. Wolfe, Wilkes-Barre.

Lycoming County Society.—J. W. Albright, Muncy; G. B. Klump, E. Lyon, Williamsport.

McKean County Society.—P. R. Straight, Bradford.

Mercer County Society.—C. W. McElhaney, Greenville; E. F. Nelson, Grove City; J. D. Hoffman, Jackson Center.

Mifflin County Society.—A. S. Harshberger, J. R. W. Hunter, Lewistown.

Montgomery County Society.—W. G. Miller, J. K. Weaver, Norristown.

Northampton County Society.—W. L. Estes, D. K. Santee, South Bethlehem.

Philadelphia County Society.—A. R. Craig, Chicago, Ill.; J. M. Baldy, P. B. Bland, G. M. Boyd, J. B. Carnett, F. D. Dickson, C. H. Frazier, J. J. Gilbride, N. Ginsburg, W. F. Guilfoyle, F. C. Hammond, L. J. Hammond, H. Hanna, W. S. Higbee, J. H. Jopson, W. Krusen, E. Laplace, C. B. Longenecker, E. Martin, E. E. Montgomery, W. S. Newcomet, W. E. Parke, J. S. Rodman, W. L. Rodman, J. T. Rugh, A. M. Seabrook, G. E. Shoemaker, P. G. Skillern, Jr., T. T. Thomas, S. E. Tracy, DeF. P. Willard, H. A. Wilson, Philadelphia.

Schuylkill County Society.—H. A. Dirschedl, Pottsville.

Somerset County Society.—C. W. Frantz, Confluence; G. C. Berkheimer, Windber.

Venango County Society.—C. Cooper, Cooperstown; E. V. Thompson, Franklin; J. F. Davis, Oil City.

Washington County Society.—D. D. Haines, Allenport; J. C. Kelso, Canonsburg; J. C. Enos, J. W. Hunter, E. M. McKay, Charleroi; J. N. Sprowls, Claysville; R. C. Farquhar, C. B. Wood, Monongahela; W. E. Hart, J. C. Knox, O. G. Lewis, J. R. Maxwell, R. S. Parry, W. D. Teagarden, A. E. Thompson, Washington.

Westmoreland County Society.—G. T. McNish, Alverton; L. J. C. Bailey, T. P. Cole, D. R. Murdoch, W. J Potts, Greensburg; C. E. Taylor, W. H. Taylor, Irwin; A. Owaroff, U. H. Reidt, L. B. R. Smith, Jeannette; E. B. Sloterbeck, Monessen; M. W. Horner, F. L. Marsh, W. A. Marsh, Mt. Pleasant; J. C. Fleming, S. B. Gray, Scottdale.

York County Society.—E. W. Stick, Hanover.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Allegheny County Society.—A. S. Sigmann, Bellevue; E. A. Sloan, Ben Avon; I. C. Harris, D.. A. Metzgar, Braddock; C. N. Schaefer, Carrick; M. U. Stoneman, Crafton; E L. Erhard, Glassport; A. Hunter, J. Porter, McKeesport; W. T. Hall, G. T. Laman, New Kensington (Westm. Co.); T. E. McConnell, Parnassus (Westm. Co.); G. W. Allyn, R. B. Armstrong, C. A. Arnold, W. P. Barndollar, W. W. Blair, C. I. Buvinger, G. E. Curry, E. W. Day, B. M. Dickinson, G. A. Dillinger, A. W. Duff, J. L. Duncan, S. I. Eber, N. A. Fischer, A. C. Frank, M. J. Gelb, L. R. Goldsmith, J. E. Gross, J. A. Hagemann, A. R. Hampsey, W. G. Hayden, E. B. Heckel, A. J. Hesser, A. J, Hopkins, C. Jackson, C. W. Jennings, W. H. Kirk, G. C. Kneedler, A. Krebs, F. V. Laurent, J. H. McCready, C. E. McKee, G. J. McKee, A. A. MacLachlan, J. S. Mabon, J. C. Markel, R. Milligan, T. J. Moran, W. E. Munroe, E. E. Neely, C. K. Owens, E. J. Patterson, D. M. Perkins, M. D. Ritchie, C. C. Sandels, S. Seegman, J. R. Simpson, S. Smith, A. Soffel, T. M. Stahlman, A. M. Stevenson, E. Stieren, G. W. Stimson, G. W. Strickland, S. A. Sturm, H. H. Turner, E. T. Waldie, E. S. Walls, F. J. Walz, N. J. Weill, H. Weiss, E. A. Weisser, H. G. Wertheimer, E. E. Wible, J. E. Willetts, Pittsburgh; M. D. Schumaker, Tarentum; A. L. Trevaskis, Turtle Creek.

Armstrong County Society.—D. I. Giarth, Ford City.

Beaver County Society.—H. E. Moore, Ambridge; W. C. Meanor, Beaver; G. S. Shugert, Rochester.

Blair County Society.—F. A. Ford, W. K. Maglaughlin, Altoona.

Bradford County Society.—C. L. Stevens, Athens; N. S. Weinberger, Sayre.

Butler County Society.—L. L. Doane, L. R. Hazlett, Butler.

Cambria County Society.—O. G. A. Barker, H. J. Cartin, L. M. Gurley, C. M. Harris, S. S. Kring, Johnstown.

Dauphin County Society.—J. F. Culp, H. H. Farnsler, Harrisburg.

Elk County Society.—J. C. McAllister, Ridgway.

Erie County Society.—D. N. Dennis, I. J. Dunn, C. F. Heard, G. W. Schlindwein, Erie.

Fayette County Society.—O. R. Altman, Uniontown.

Franklin County Society.—F. N. Emmert, Chambersburg.

Greene County Society.—H. C. Rice, New Freeport.

Huntingdon County Society.—W. H. Sears, Huntingdon.

Indiana County Society.—W. F. Weitzel, Indiana.

Jefferson County Society.—A. F. Balmer, Brookville; C. L. Maine, Dubois (Clearfield Co.); R. C. Gourley, Punxsutawney.

Lawrence County Society.—D. C. Lindley, C. E. Trainor, New Castle.

Lehigh County Society.—J. T. Butz, Allentown.

Luzerne County Society.—E. U. Buckman, L. H. Taylor, Wilkes-Barre.

Mercer County Society.—D. A. Brown, Greenville; C. B. Williams, Sharon.

Montgomery County Society.—J. Q. Thomas, Conshohocken; H. F. Pyfer, Norristown; E. G. Kriebel, Worcester.

Philadelphia County Society.—T. R. Currie, C. P. Franklin, H. F. Hansell, G. H. Makuen, G. M. Marshall, W. C. Posey, W. Reber, S. D. Risley, W. M. Sweet, Philadelphia.

Schuylkill County Society.—H. M. Wasley, Shenandoah.

Somerset County Society.—C. P. Large, Meyersdale.

Venango County Society.—G. B. Jobson, Jr., Franklin.

Washington County Society.—F. C. Stahlman, Charleroi; J. F. Donahoo, G. B. Dunkle, J. W. McKennan, J. B. McMurray, Washington.

Westmoreland County Society.—L. M. Mitchell, Belle Vernon; E. M. Clifford, C. W. McKee, Greensburg; A. B. Blackburn, Latrobe; C. B. Rugh, New Alexandria.

GUESTS.

L. O. Howard, Maj. Eugene R. Whitmore, U.S.A., Washington, D. C.; Joseph C. Beck, John Ridlon, William Allen Pusey, Chicago, Ill.; A. E. Bulson, Jr., Fort Wayne, Ind.; Fred H. Albee, J. B. Bissell, Isaac Levin, New York City; J H. J. Upham, George V. Sheridan, Columbus, Ohio; C. D. Selby, Toledo, Ohio; W. J. Holland, Rev. J. M. Thoburn, Jr., Pittsburgh, Pa.; G. D. Kahlo, White Sulphur Springs, W. Va.

DELEGATES FROM SISTER SOCIETIES.

New Jersey State Society.—Philip Marvel, W. Blair Stewart, Atlantic City, N. J.

Pennsylvania Pharmaceutical Association.—I. G. Amsler, P. G. Walter, Pittsburgh.

VISITORS.

R. G. Carlin, Fort Smith, Ark.; T. A. Williams, Washington, D. C.; W. M. Davis, St. Petersburg, Fla.; R. E. Loucks, Detroit, Mich.; W. G. Stern, Cleveland, Ohio; W. N. Gilmore, East Liverpool, Ohio; J. N. Calhoon, H. S. Maxwell, Lisbon, Ohio; J. Bronfenbrenner, Pittsburgh.

COMMUNICATION.

CORRECTION FOR THE REPORT FROM FRANKLIN COUNTY SOCIETY.

To the Editor: Will you make the following correction for the last three lines of the fourth paragraph in the report on page 993 of the JOURNAL for September: If the mortality can be reduced to five per cent. it is quite a gain. JOHN J. COFFMAN.

Scotland, September 24, 1914.

COUNTY SOCIETY REPORTS.

MEETING OF THE FOURTH CENSORIAL DISTRICT.

The Fourth Censorial District, including the medical societies of Dauphin, Lebanon and Lancaster counties, held its annual outing at Hotel Conewago, Mt. Gretna, August 28, the guests of the Lebanon County Medical Society. The Lebanon and Dauphin County Societies were well represented, about seventy-five answering the roll call. Lunch was served at 12 o'clock and dinner at 3. All outdoor sports had to be called off on account of the rain, but everybody enjoyed the "indoor sports" to the utmost.

Immediately after dinner a business meeting was held and after the routine business the following officers were elected for the ensuing year: President, Dr. H. F. Smith; vice president, Dr. John Oenslager, Jr., and secretary, Dr. J. Harvey Miller. The committee for next year consists of Drs. Brubaker and Rank of Lebanon County; Drs. Noble and Shookers of Lancaster County; and Drs. Dickinson and Moffitt of Dauphin County.

SEVENTEENTH CENSORIAL DISTRICT MEETING.

The eleventh annual meeting of the Seventeenth Censorial District was held at Bloomsburg, Columbia County, September 3, with four physicians present from Montour County, ten from Northumberland County, two from Snyder County, and thirty from Columbia County. Two medical students were also present. The meeting was called to order in the courthouse by Dr. H. W. Gass, the retiring president, at 11 A.M. Organization was effected as follows: President, Dr. J. R. Montgomery; secretary, Dr. L. B. Kline.

The minutes of the tenth meeting of the district, held at Sunbury, September 5, 1913, were read and approved. An appropriate and cordial address of welcome was delivered by Dr. J. B. Follmer, representing the president of the Columbia County Medical Society. Response to the address was made by Dr. J. C. Robbins of Danville, in a happy and felicitous style. "The Sources of Summer Infections" was presented by Dr. G. C. Follmer of Orangeville; several members took part in the discussion of the paper. The morning session closed at 12:15 when about thirty-five joined in an excellent dinner at the Exchange Hotel.

The afternoon session was called to order at 1:30 P.M., by President Montgomery. "Surgical Shock" was presented by Dr. C. M. Thomas of Sunbury, in a practical and forceful manner, which was exceptionally well received, the discussion being opened by Drs. Brunner and Reese and participated in by several others. Dr. E. W. Tool of Selinsgrove read a paper on "Nocturnal Enuresis." Dr. H. T. Simmonds of Shamokin read a paper on "Carditis," in which he clearly elucidated the many factors that enter into the diagnosis and treatment of this disease. Dr. J. T. MacDonald opened the discussion on the paper. "A Few Dont's" (referring to eye work) was then presented in a logical manner by Dr. Henry Bierman of Bloomsburg. Many points were touched upon and a good discussion followed. Dr. J. T. MacDonald of Bloomsburg returned from Europe just two days before the meeting, where he took a three months' postgraduate course at Vienna. On being called upon he gave a most interesting and thrilling account of his varied experiences in war-stricken Europe, in his efforts to reach the United States, in the four weeks of his trip from Vienna to New York.

The attendance at this meeting was slightly in advance of any previous meeting. The program was of high order of excellence and all pronounced it a great success.

The time of holding the next meeting and the program were left in the hands of the district censors. LUTHER B. KLINE, Secretary.

CUMBERLAND—OCTOBER.

The regular meeting of the Cumberland County Society was held October 13, in the Carlisle Y. M. C. A., sixteen members being present. The minutes were read and approved and Dr. Spangler read his report as delegate to the state society. A committee was appointed by the president to draft by-laws and report at the January meeting.

Dr. David S. Funk, Harrisburg, read a practical paper on "Typhoid Fever," which was discussed freely. E. R. PLANK, Reporter.

DAUPHIN—SEPTEMBER.

After a recess of two months the Dauphin County Society opened its regular sessions with a meeting held in the lecture room of the Harrisburg Academy of Medicine, Tuesday evening, September 1, Dr. John F. Culp presiding. The members showed their interest in the society by turning out in goodly numbers. That they did not allow the vacation to erase from their minds the memory of the county society, bespeaks the benefits they realize they have obtained from the meetings in the past. The future meetings promise to be of great interest, and the first meeting, if it can be taken as an indication, foretells good attendance.

Dr. C. S. Rebuck prepared a paper on the subject of "Tuberculosis in Childhood," which was read by Dr. Thomas S. Blair. The subject is a very pertinent one especially at this time, when the people, the physicians and the state are so actively engaged in efforts to overcome the prevalence of tuberculosis. Dr. Rebuck remarked that "in no other field" of preventive medicine "will there be so much accomplished as in the one which will .... take every child suffering from tuberculosis and properly care for him so that when he reaches adult life he will not be a dependent, or if that is impossible at least prevent him from marrying and continuing a tubercular strain." Further he says that unless the treatment begins with childhood the disease will never be eradicated regardless of the number of sanatoria. Dr. Rebuck brought out the fact that the tubercle bacillus was not the sole cause of the disease, although it must of necessity be present, but that "some other factor must be the real cause, to be looked for and that factor is nothing more or less than the percentage of one's resistance," this resistance being decreased by alcoholic, epileptic, feeble-minded and syphilitic parents. Poverty also plays its part in restricting the necessities for normal development. The child, undeveloped because of the foregoing conditions can not withstand the strain placed upon him as can the child who, though he has the hereditary tendency, has the environment of a higher type of life.

In the endeavor to eradicate the disease we must learn to diagnose it in the earliest stages when there are the symptoms of "general debility, or anemia, or an unaccountable nervousness, a hacking cough, or a chronic hoarseness," where it is supposedly only "chronic bronchitis, or malaria, or dyspepsia or what not," and not at the time when the patient is in the advanced stages and the diagnosis is readily apparent, because it is then frequently too late to give aid.

The writer stated that "when we realize that 6500 children die yearly in the United States from tuberculosis, at the average age of twelve, and that a child who dies before he has rendered any service to society through productive energy is a total loss to the state, and that also vast numbers of adults die from this disease, then it is assuredly our duty to be more careful in our diagnosis. Also, we should not condemn and belittle by insinuations or direct criticism to the laity, the work of these men and agencies that are honestly attempting to conquer the disease." Abnormal children should be thoroughly examined with such means as the hemoglobin test, with which Dr. Rebuck found that the majority of the pupils in two tuberculosis schools had from sixty to seventy per cent. The temperature record is one of the greatest aids to diagnosis. "A persistent subnormal morning temperature can scarcely mean anything other than beginning active tuberculosis."

The treatment for tubercular children is proper environment. Farm schools were suggested with great favor where the child should be kept from one to six years. The training should consist of "regular public school instruction, modified to their health conditions; also gardening and flower culture in summer, and the rudiments of manual training and house work during the winter months." It was suggested that these places should be homes for the children rather than institutions. By hygienic training of the children "they would unconsciously spread this gospel in their homes and to their playmates, and little by little this awful scourge of humanity might be driven from the earth. But never will this Utopian dream be realized until we begin with the children."

After the discussion of the paper Dr. Harvey Smith presented a case of carcinoma of the transverse colon which was removed with benefit to the patient. He presented the specimen to the members for inspection.

Dr. G. B. Kunkel was called upon for a description of Europe during his stay there during the beginning of hostilities. He gave an interesting account of the unsettled conditions and at a future meeting he will give an account of the medical conditions abroad which were viewed and studied by him before the war broke out.

H. Hershey Farnsler, Reporter.

DELAWARE—June, July, September.

The regular meeting of the Delaware County Society was held at Lima, on June 18, and it was unanimously decided by those present to hold future meetings on the third Thursday of each month, instead of the second Thursday.

At the meeting of July 16, held at the headquarters of the Alpha Boat Club, Chester, at 3:30 p.m., the members were the guests of the doctor members of the club. After transaction of routine business, the members were requested to report interesting cases coming under their notice. Dr. J. L. Forwood presented a case of injury to the leg in which bony fixation of both hip joints followed the prolonged use of a cast.

At the meeting of September 17, held at Chester Hospital at 3:30 p.m., the members reported interesting cases occurring in their practice. Drs. Stiteler, Sickler and Egbert were appointed a committee to draft a set of resolutions upon the death of Dr. Clarence K. Alger of Swarthmore, and forward a copy thereof to his widow.

W. E. Egbert, Reporter.

ELK—September, October.

The Elk County Society met at Johnsonburg, September 10, with just a quorum present. Dr. Warnick gave a talk on the burning question of the hour, "Gonorrhea," with a plea for the reporting of all transmissable or communicable diseases.

He considers it more important to report venereal disease than to report chicken-pox. His remarks provoked a lively discussion. We were unable to decide what we would do about reporting the innocent wife. Dr. Logan urged a more careful examination than the ordinary practitioner makes. He had had satisfactory results with twice daily irrigations of potassium permanganate, particularly in early cases, where the diagnosis was made from the smears (in males) before the discharge became mucopurulent. Many cases of innocent infection are due to careless, indifferent or ignorant treatment by the average practitioner.

The meeting of October 8, was held in Ridgway at 12:30 P.M., and was a record breaker. We had a large crowd (One over a quorum is an occasion for loud rejoicing in Elk County; we had seven this time, and would have had eight, but one fellow got mixed in the hour). The secretary gave his version of the meeting at Pittsburgh, and it was not at all favorable to the "trained politicians." However we expect to be one of the ninety and nine in Philadelphia next year, if we can leave our "large and growing practice" long enough. It was moved and seconded that we pay our dues to the state society up to December 31, 1914, out of the treasury, to conform to the new by-laws, giving us a clean start for 1915. We want to pay our debts to the state, for we surely did enjoy the meeting in Pittsburgh; we did not think it possible to have so much fun on Welch's Grape Juice. We are not strong on attendance, but we are right there with the cash, when it is necessary. Many of us are living in the "Good Old Days," when so and so was here and the society did this and that. A close analysis of the good old days, shows in this as in other lines, that the good old days were not so very good after all. However that may be, we are in a slump up here and have been for some time, but to-day's meeting is a hopeful sign; we had one member more than needed for a quorum. Next month at St. Mary's we ought to have at least nine, as we have five members in St. Mary's.

Those who missed the October meeting, missed a timely and practical paper by Dr. McAllister on "Ocular Therapeutics," which called attention to some of the more glaring mistakes the general practitioner makes when he attempts to prescribe for eye troubles and eye injuries.

Adjourned to meet in St. Mary's, nine days after the deluge of November 3, or November 12, at one o'clock.

S. G. Logan, Reporter.

LANCASTER—September.

The scheduled meeting of Lancaster City and County Medical Society was held in Malta Temple September 2, with an unusually large number in attendance.

Dr. C. J. Hunt of the State Department of Health who was to read a paper was unable to be present on account of a serious outbreak of dysentery at Hazleton.

A paper on the "Treatment of Pneumonia" was read by Dr. W. J. Leaman, and discussed by Drs. Appel, Newpher, Walter and Leaman.

Dr. E. J. Stein read a paper on "Vaccines in the Treatment of Diseases of the Upper Respiratory Tract," which was discussed by Drs. Hershey and Roebuck.

A vote of thanks was moved by Dr. Newpher.

Several bills were ordered paid.

A committee consisting of Drs. Stahr, Farmer and S. W. Miller was appointed to draw up suitable resolutions in regard to the death of Dr. Raub.

Dr. Atlee for the Legal Committee reported that a member of the Radio Institute had been arrested for getting money under false pretences. He also reported that the committee will, in the near future, mail to each member a letter asking for the names of persons illegally practicing medicine in their neighborhood.

Henry B. Davis, Reporter.

LEBANON—September.

The Lebanon County Society met September 8, at 2:45 P.M., in the Courthouse, President Walter presiding. Dr. Clyde Saylor presented a paper on "Albuminuria." After careful definition he limited his remarks to the two forms of albumin, globulin and seroglobulin. The latest theories of osmosis were considered. Dr. Saylor said that if a solution of meat albumin were transfused into the venous circulation of a dog it appears unaltered in the urine, while serum albumin similarly injected is retained by the blood and does not cause albuminuria although the percentage of albumin in the blood is considerably raised above normal. The urine of a man, after eating eight or ten raw eggs inside of five of six hours, will show traces of serum albumin. This matter becomes of interest in considering the diet in Bright's disease. Dr. Saylor has had for a patient a man who established the extraordinary record of thirteen eggs for one meal. Functional albuminurias are the most amenable to dietetic therapeutics. The question of predisposition in albuminuria was discussed and proven in several cases. The condition too, can be occasioned by the toxins eliminated in the exanthemata. The speaker pointed out the fact that while large albuminurias of renal origin can hardly be due to anything but Bright's disease, yet it remains that large albuminurias have been found with no existing Bright's disease, and also that serious cases of Bright's disease have existed in which albumin was absent. Qualitative and quantitative tests were outlined.

George R. Pretz, Reporter.

MONTGOMERY—September.

The regular meeting of the Montgomery County Society, the first after a two month's vacation, was held at the State Hospital, Norristown, September 2, The program was prepared by the physicians of the State Hospital for the Insane.

Dr. Jessie M. Peterson read a paper on "Borderline Cases of Insanity." Her paper was illustrated with several patients of this class. Dr. Flora P. Easton presented a case of constitutional psychopathy and went over the symptoms carefully. Dr. Kathryn Slattery presented a case of abnormal personality. Dr. Peterson in closing the clinic cited a case of abnormal personality, the patient being a constitutional liar and swindler.

Resolutions on the death of Dr. J. R. Umstad were read and adopted.

The meeting of September 16 was in the form of a clinic held in the Philadelphia hospitals. The members made the trip by automobiles.

The morning clinic was held at the Jefferson Hospital, and was given by Dr. Thomas McCrae, the following cases being presented: (1) Demonstration of pyloric obstruction, Dr. McCrae outlining the stomach by giving one dram of tartaric acid dissolved in water, followed by a dram of bicarbonate of soda; (2) simple goiter, Dr. McCrae suggesting that there are certain localities in the state where the inhabitants acquire goiter; (3) leukemia, white cells 584,000, red cells 2,700,000, and smears of the blood shown under the microscope; (4) Hodgkin's disease, normal blood count, enlarged liver and spleen and large glands in the groin and axilla.

This clinic was followed by lunch given by the Philadelphia County Medical Society at the University Club.

After luncheon the society went to the German Hospital and saw Dr. J. B. Deaver operate upon the following cases: carcinoma of the breast, myoma uteri (2 cases), chronic appendicitis (2 cases), acute appendicitis (2 cases), gall bladder disease, duodenal ulcer, and hypertrophied prostate.

The members all agreed that this was one of the most profitable meetings of the society.

Edgar Stanley Buyers, Reporter.

SOMERSET—September.

The Somerset County Society, on invitation of Dr. Henry Wilson, physician and surgeon in charge, met, September 15, simultaneously with the board of management of the County Home and Hospital.

Much important business was transacted at the morning session, not the least of which was a discussion of the system of employing physicians by the year to treat the poor of the county in the different districts of the county. This system was not generally approved by the society; the members and the secretary of the board participated in the discussion, and if nothing more was accomplished than a better understanding between the board and the physicians, as to how persons may be sent to the home and under what circumstances they may be sent, it has paid well to hold the meeting at the hospital.

A fine dinner was prepared for all present, and was well served under the direction of Dr. Sylvia Wilson.

After dinner the doctors escorted the members through the hospital and exhibited many interesting cases. This again would have paid all the members to be present, and those that were not thus lost a double benefit. We wish it could be impressed upon the members that much more is lost than gained by absenting themselves from the meetings.

The program was continued to the next meeting which will be held at Meyersdale, November 17.

H. C. McKinley, Reporter.

YORK—September, October.

The York County Society met in the parlor of the Colonial Hotel on September 3, at 1 p.m. Dr. J. N. Dunnick presided, and about fifty members were in attendance. Dr. S. J. Immerman, York, was present as guest.

Dr. Charles K. Mills of Philadelphia addressed the society upon the subject of "Aphasia, Apraxia and Mental Deficit." The paper was illustrated by a series of charts representing the cerebral sensory and motor speech centers, Wernicke's zone, the lenticular zone of Marie and the position of osteoplastic openings in cases in which operation is especially guided by speech disturbances.

Dr. Mills said that while the study of speech disturbances was one of the first to contribute to our knowledge of focal diagnosis, especially by such discoveries as those of Broca and Wernicke, the subject of aphasia has continued deeply to interest neurologists down even to the present day. Some of the problems of aphasia have as yet only partially been explained and some are the focus of animated discussion both here and abroad. The subject can be approached by considering first the so-called classical theories of aphasia; secondly, the views of Marie; and, thirdly, Liepman's doctrine of apraxia as it relates to aphasia.

The so-called classical theory of aphasia is one which following Broca, Wernicke, Charcot, Bateman and others recognized in the first place a motor center for speech in the posterior third of the left frontal convolution, and, in the second place, distinct sensory or receptive centers, the chief of these being one for word hearing in the upper temporal convolutions and one for visual speech in the angulo-occipital region. Many cases have been reported to emphasize the truth of such a subdivision of special centers or areas concerned with speech phenomena. This theory, of course, also recognized the structural and physiologic connection of these centers with each other and the fact that peculiar speech disturbances are produced by destruction both of the centers so-called and of the neural mechanisms made up by these points of concentration and other associating structures. Dr. Mills showed schema illustrating the classical view.

The somewhat revolutionary views of Marie were briefly explained. According to Marie, whose views were first expounded about ten years since, auditory, visual and motor speech centers in the sense usually accepted do not exist; that aphasic phenomena are not due to interference with auditory, visual, or other images, but to intellectual deficit, this deficit causing difficulty in the comprehension of speech and interfering with numerous didactic processes. Marie also holds that Broca's convolution takes no part in the function of speech, nor its lesions in the production of aphasia. This is perhaps the most startling of his assertions.

Dr. Mills stated that he did not subscribe to the views of Marie. In the main, he held to the classical theory, but believed that Marie had thrown new light upon the subject of aphasia and especially had helped us to a better knowledge of the real or apparent mental state of aphasics. Dr. Mills believes there was mental deficit in aphasia, but that this was almost strictly proportionate to the destruction of the neural mechanisms concerned with speech. He thought that it was necessary to avoid the mistake of supposing that the aphasia was due to the mental condition rather than the mental condition to the speech disorder.

Diagrammatic schemes were shown to indicate the views of Marie. The speaker explained the doctrine of diaschisis as expounded by von Monakow. According to this theory of diaschisis when any part of what might be termed the cerebral zone of speech was affected by a lesion the results of this disturbance extended to all parts functionally connected or related to the region affected by the lesion. Centers of speech, points of concentration of function must exist, but it is equally true that these must have few or many physiological connections all of which must be understood by one in order to have even a general idea of the subject of aphasia.

Dr. Mills gave special attention to the subject of apraxia. He treated of apraxia according to the views of Liepmann, which views have not as yet found their way into textbooks and dictionaries. The usual definition of apraxia follows the ideas laid down years ago by Kussmaul, making it synonymous with mind-blindness and soul-blindness or object-blindness, regarding it as an affection in which the memory of the uses of things is lost. It is this and more. The apraxia, as defined by Liepmann and as accepted by Dr. Mills, is the inability to apply knowledge purposively. The apraxic can not make those movements which he wishes and the use of which he can in some cases comprehend. Motor apraxia is the most easily understood. It is the inability of the patient to correctly use his motor apparatus, neural and muscular, to a definite end.

The speaker illustrated apraxia by numerous examples, as the inability of the patient to correctly cut with a knife or scissors, to comb the hair, to lock or unlock a door, to dress or undress and above all, in connection with the subject of aphasia, to talk properly. The musculature concerned with phonation, enunciation and articulation was spoken of by Dr. Mills as the limb of speech. Just as the apraxic can not use his leg or arm properly, so he can not make use of the movements of his tongue, jaw, larynx, etc., in speaking. Dr. Mills referred to cases illustrating apraxia which he had studied at the Philadelphia General Hospital and which had been reported by him in a previous paper. In one case of aphasia (motor or sensorimotor in type) the patient when asked to close his eyes closed his mouth, doing this repeatedly on different orders. When asked to put his hand on his shoulder he placed it on his head. Given a key to lock a door, he introduced this properly into the lock, but failed to turn it in the right direction. Another right hemiplegic and aphasic, when asked to place his left hand on his head, invariably raised the arm and held it flexed at the elbow a short distance from his head. Curiously, all of those examined on one occasion, five or six in number, combed the hair in proper manner, this test having been used because it was one of Liepmann's illustrations.

The ability of the patients to perform movements without the objects, which were usually employed in carrying out such movements, was tested. The patient was asked, for instance, to show his interlocutor how to write his name in the air, that is, by movements of writing, also in a similar way to write easy words like "cat" or "sick" or "door," etc. After having been tested as to his ability to use a key in a door, he was requested to show how he would unlock a door. Similarly, experiments were made as to his ability to indicate how he would eat with a spoon or knife and fork, etc. The results showed inability or impairment of the power to do these purposive acts.

The distinguished guest was given a rising vote of thanks and was unanimously elected to honorary membership.

The York County Society met in the parlor of the Colonial Hotel, October 1, at 1 P.M., with Dr. J. N. Dunnick presiding and forty-five members present.

Dr. John A. Melsheimer, Hanover, read a paper on "Arteriosclerosis," and Dr. J. C. May, Manchester, spoke upon "The Diagnostic Significance of Blood Pressure Readings." These papers and the discussion which ensued provided one of the best meetings in many years. It was agreed that the etiology and the pathology of arteriosclerosis were not yet completely understood, and that numerous factors must be considered. High blood pressure must be interpreted only as a symptom in the general survey of the symptom complex, and not as a pathological condition or a disease *per se*. In taking blood pressure readings, the auscultatory method alone should be relied upon, and several readings should be taken to avoid the normal variations caused by excitement, etc. A blood pressure of 150 or over, especially if accompanied with an accentuated second aortic sound should always excite the suspicion of chronic interstitial nephritis, irrespective of the urinary findings. The pulse pressure, or the difference between the systolic and diastolic readings, is a most important factor, and should be studied more carefully. As a diagnostic factor, it was brought out that in aortic regurgitation, the systolic reading in the thigh is ofttimes fifty or more points higher than in the arm; in the same disease, the pulse pressure is often represented by a wide difference in the systolic and diastolic readings. Of prognostic significance is the relationship existing between the systolic pressure and the pulse rate in pneumonia,—the prognosis being more favorable, all other things being equal, when the systolic pressure, expressed numerically, is lower than the pulse rate. In surgical shock, the systolic pressure becomes lowered, and a careful watch of the blood pressure during operations is therefore ofttimes a helpful adjunct. Our clientele must be educated to know that blood pressure is not a disease to be treated, any more than they would expect treatment for rapid pulse or respiration or fever, *per se.* When associated with chronic interstitial nephritis, it is wise to be very carefully guided by the patient's general condition before any attempt is made to "treat" high blood pressure, which is often nature's own remedy for the defense of that condition. In addition to judicious rest, hydrotherapy, and hygienic measures, a diet containing a low protein content and exhibited in small frequently repeated meals will be found helpful. Vasodilators should be used very cautiously, if at all, although the iodids may be employed at times with benefit. Above all, treat the patient and not the blood pressure.

A resolution was unanimously passed providing for action upon the model constitution and by-laws, as recommended by the House of Delegates at the state meeting in Pittsburgh. The same will be presented at the November meeting for consideration.

The Committee on Scientific Business for 1915 will consist of Drs. J. N. Dunnick, Julius H. Comroe and Lawton M. Hartman.

Julius H. Comroe, Reporter.

NECROLOGY.

IN MEMORIAM—JOHN R. UMSTAD, M.D.

(The following resolutions were adopted by the Montgomery County Medical Society, September 2, 1914.)

Whereas in the death of Dr. John R. Umstad of Norristown, the medical fraternity loses one of its most valuable members; and especially so, the Montgomery County Medical Society, with whom the deceased was long associated, and

Whereas, His kindly nature, geniality, courteous manner, high moral character and self-confidence were an inspiration to us all; therefore be it

Resolved, That we hereby express our appreciation of his faithfulness and efficiency as a physician, and the honorable and professional manner in which he always performed the duties of his high calling. We also record our appreciation of his character as a man, a citizen and a dear friend.

Resolved, That we tender to his wife and children our sincerest sympathy in their bereavement, and be it further

Resolved, That these resolutions be spread upon the minutes of the society; that a copy be sent to the bereaved family; that a copy be sent to each of the papers of Norristown to be published and in the Pennsylvania Medical Journal.

George W. Stein,
Joseph K. Weaver,
George H. Hartman, Committee.

IN MEMORIAM—GEORGE W. C. JAMES, M.D.

(The following note was submitted at the meeting of the Huntingdon County Medical Society.)

Dr. G. W. C. James of Orbisonia died at the ripe age of eighty-five years on April 7, 1914.

The Huntingdon County Medical Society expresses its appreciation of his life and character as a physician. He was a splendid physician; a good citizen; and a fine type of American manhood, beloved by all who knew him; a man whose sympathies were so acute that he never turned a deaf ear to the cry of suffering humanity. Now, since he has crossed the "Great Divide" and gone to his reward, let us not mourn but rather rejoice for our loss is his gain.

R. Myers.
R. R. Decker.
H. C. Frontz.

IN MEMORIAM—ROBERT P. MARSHALL, M.D.

(The following memorial note was adopted at the meeting of the Armstrong County Society, September 8, 1914.)

Dr. Robert P. Marshall was born in Kentucky in 1848. After completing his college course he located in Armstrong County where he practiced at Mahoning for about twelve years, then located in Kittanning and built up a good general practice.

He was kind to his patients, ethical to his professional brethren and beloved by all who knew him. He was a member of the Armstrong County Medical Society and served as president in 1911, and for many years was an earnest worker for interest of the profession.

T. M. Allison,
R. G. Ralston,
C. Y. Jessop.

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ADDRESS.

CHAIRMAN'S ADDRESS.

BY ALFRED HAND, JR., M.D.,
Philadelphia.

(Delivered before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

I find it has been the custom in the Section on Medicine that the Chairman's Address should have no title, the chief reason for its position on the program being evidently to break the ice, as it were. The ice, however, is never very thick in such an organization as this, so the remarks need not be very weighty. Whether there is even a thin film of ice may be doubted, for it has always seemed to me that at these meetings of the Medical Society of the State of Pennsylvania there are so many friendships being knit up, as we meet with those whom we have not seen for some time, and so many new acquaintances being formed, and so much genuine cordiality being shown, that even a stranger would soon feel at home. Whether the medical profession has this capability to a greater degree than other callings is hard to determine, but we undoubtedly have more training than many others in this line, for our patients often come to us embarrassed and perturbed, and so physicians, as a rule, soon acquire the knack of putting people at their ease.

Another reason for the kindly spirit shown is that in this society, as in our profession, we are banded together with noble aims and high ideals and this at once establishes a bond of sympathy in these meetings. We are sometimes in danger of getting a little too self-centered and of feeling that we have almost a monopoly of altruism, and that our efforts to benefit mankind (often at our own expense) are not given due recognition, but at those times we need to look around a little; perhaps from such vantage ground as is afforded by a convention like this, and then the return to work is with renewed vigor and increased enthusiasm.

I would like to suggest that there is one question that each member should ask himself when at home, and that is "Have I done my duty by the state society?" This society can be made an instrument of great usefulness not only to the body politic through our House of Delegates but to the members themselves in the scientific sessions. Whether the latter group receives much benefit from it depends directly upon the members themselves. For two years I have been closely associated in the construction of the program and as I am now freed from further work in this connection I would like to say a few words on the subject. First, with regard to the time limit of ten minutes for each paper. This seems like a great hardship, especially to the man on the platform, as I can testify from experience. Let me indulge in a little mathematics. With three sessions of three hours each there are 540 minutes to be divided among twenty-four numbers, twenty-two of which are entitled to five minutes for closing the discussion, these using up 350 minutes, leaving 190 minutes for discussion, or a little less than an average of ten minutes for each paper. The only way by which the time may be increased for the readers is to cut down the number of papers presented and after you have all been through the offices of secretary and chairman you will see the undesirability of that. We have to incur a certain amount of unpopularity from our colleagues, often very intimate ones, with their question, "Why didn't I get on the program?" In spite of that, it is not an evil but a good thing that the number of titles sent in always exceeds the number of places on the program. And it would be still better if more of the members, especially from districts outside of Pittsburgh and Philadelphia (which places can be depended on to do their duty) awaken to a sense of their responsibility in this direction. The greater the number of papers that the committee has before it, the greater will be the likelihood of a program sufficiently varied to appeal to a large number. And a member ought not to feel hurt if, after sending in a title, the committee replies that it is unable to place it on the program, for I can assert from direct knowledge that in the last two years there has been nothing personal in any of the declinations, for the aim of the committee has been to build a program which would be of most good to the greatest number.

In closing, let me call attention to another duty that rests not only on the members of this society but on the whole profession throughout the United States. The wastefulness of the war which is now desolating Europe has been emphasized by many writers and the loss of life and property has been portrayed in a way which gives us some idea of the horror of it all. The point which I have not seen mentioned specifically is the retarding effect which it will have on the advancement of medical science. The debt which medicine already owes to Europe can not be estimated, nor that which the future might bring forth. But it is hardly conceivable that the present turmoil will favor the continuation or inception of researches into the medical problems which are still crying urgently for solution. It devolves therefore upon the medical profession in more tranquil lands to heed the constant call for volunteers in that unending war, in which differences of nationality, race or languages are not recognized—the war against disease.

SCARLATINA VACCINE.

The so-called scarlatina vaccine is said to consist of killed streptococci from scarlet fever cases. While the infectious agent of scarlet fever has not been established, the close association of streptococcus with scarlet fever has been considered a warrant for the use of antistreptococcus serum, and various vaccines prepared from this organism, in the treatment of scarlet fever.—*Jour. A. M. A.*, Aug. 29, 1914, p. 796.

ORIGINAL ARTICLES.

BANTI'S DISEASE; REPORT ON OPERATIVE CASES.

BY JOSEPH SAILER, M.D.,
Philadelphia.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Banti's disease was first described by that distinguished pathologist in 1895 in Ziegler's *Beitrage* for that year. He had seen a number of cases, described the clinical course and suggested the best line of treatment. In other words, his paper was a complete study of the disease and, excepting some rather vigorous expressions of opinion on the part of various clinicians and pathologists, nothing of real importance has been added since. Essentially the disease consists first of enlargement of the spleen and second, at a much later period, the development of cirrhosis of the liver. The course is prolonged ordinarily for many years and death occurs as a result of the cachexia produced by the progressive contraction of the liver. The only other change of importance is the alteration in the blood and of this the most striking feature is an extreme and persistent leukopenia. During the early course of the disease the patient suffers but little, with the exception that from time to time there are attacks of pain associated with hemorrhage. As a rule the hemorrhages are gastrointestinal in type and it is probably early cases of Banti's disease, as Stevenson suggests, that gave rise some years ago to the belief expressed by Osler that there was a peculiar hemorrhagic diathesis associated with splenomegaly. Sometimes, however, the hemorrhages occur in various organs and under these conditions are not massive and even in the gastrointestinal type the only manifestation of the hemorrhage will be the attack of pain and occult blood in the stool. I have within the past two years had the opportunity of studying rather carefully three cases of Banti's disease. In all three of these splenectomy was performed. Two of the patients recovered and one died but in the last case death was due less to the operation than to the massive hemorrhages that preceded it, and in the hope of stopping which the operation was performed. One patient never had massive hemorrhages but occasionally had severe attacks of pain in the intestines after which occult blood could be found, and on one occasion while under my care had an attack of pain in the left flank subsequent to which blood was found in the urine, so that I feel reasonably safe in concluding that a small renal hemorrhage occurred.

Case 1. The first patient, a man of forty-five years, consulted me in October, 1912. In November, 1910, he had had an attack of vomiting and diarrhea. In January, 1911, he developed a cough that lasted for months and was accompanied by copious expectoration. February, 1911, it was noted that the spleen was enlarged. At this time the physician who saw him made a diagnosis of leukemia basing this upon a single count that, as nearly as I could learn, showed a slight leukocytosis. In April, 1911, the leukocytosis disappeared. During this time he had been given arsenic in large doses and developed herpes zoster on the face. During the summer of 1911 he had attacks of severe pain in the abdomen extending from the umbilicus to the symphysis. Sometimes there was nausea but no vomiting. The pain usually lasted about five hours, began with a slight bruised feeling, the abdomen became tender and there was severe pain which terminated always with the administration of morphin hypodermatically. In December, 1911, he had his fifth attack of pain and attacks occurred also in March, April, August and September of 1912. After the April attack there was edema of the pubes and scrotum, and the same thing occurred after the August attack. After the September attack he had persistent sneezing for several days. This was followed by coughing and a copious expectoration. There was nothing in the family history nor in the previous history which threw any light upon the cause of this condition. He was married, had two healthy children and although he has worked hard and successfully at his profession he has never felt the work to be a burden. There has been no loss of weight at any time and indeed at the time of his visit his weight, 155 pounds, was the highest that it had ever been.

The physical examination did not reveal any pathological disturbances in the organs of the thorax. There was doubtful inequality of the brachial pulses, a bruit in the vessels of the neck when the head was turned to one side, a very doubtful roughness of the breath sounds with impairment of the volume in the second interspace in the midclavicular line on the right side. In the abdomen the only abnormal features found were the spleen and liver. The lower edge of the spleen extended one and one half inches below the level of the umbilicus and to the median line. It was rounded,hard,not tender,freely movable,could be palpated bimanually and the upper border of dullness began at the seventh rib in the midaxillary line and moved downward freely with respiration. The liver extended one and one half inches below the costal margin in the midclavicular line. The surface was smooth and its edge distinct. The peripheral lymph glands were not enlarged. The nervous system was normal. The blood pressure was 118 and 68. The blood count showed 4,880,000 red blood cells; hemoglobin, 75 per cent.; white blood cells, 6600. The differential count was polymorphonuclears 65 per cent., lymphocytes 26.5, large mononuclears 4.3 per cent., transitionals 2.5 per cent., eosinophils 1 per cent. In November the white blood cells were 3200, polymorphonuclears 36 per cent., lymphocytes 43 per cent., mononuclears 7 per cent., transitionals 5 per cent., eosinophils 2 per cent., basophils 2 per cent.; that is to say, a loss almost wholly of the polymorphonuclears. In March there was still a moderate lymphocytosis and a reduction of the polymorphonuclears. White cells were 6000. No particular change occurred in the physical condition of the liver and spleen. In December, 1912, he had an attack of pain and after this occult blood was found in the stools. In February, 1913, he had an attack of pain in the right flank. The subsequent day the urine showed a considerable admixture of blood microscopically.

It was decided, in view of the absence of any rational medical treatment, to have the spleen removed. This was done by Prof. J. C. DaCosta at the Jefferson Medical College Hospital. The operation was done rapidly in spite of difficulties due in part to adhesions, in part to the extreme fragility of the splenic vessels. There was some loss of blood but the patient rallied well and seemed to be in good condition. By evening he was vomiting severely and the breath had the characteristic odor of acetone. Examination of the urine the next day showed that it was loaded both with acetone and diacetic acid. He was placed upon enteroclysis with six per cent. bicarbonate of soda. The stomach was washed once. At this time he was extremely prostrated and it seemed doubtful if he would survive but as the reduction in the acidity of the urine became distinct the vomiting ceased. He then developed pain in the left lower chest of an excruciating character and had almost complete anorexia. His sufferings and discomfort at this time were extreme but he bore them with fortitude. He developed fever and leukocytosis sometimes in excess of 30,000. It was supposed that the pain and leukocytosis might be due to splenization of the bone marrow, which has been described in many cases of splenomegaly, but the discovery of a rather large stitch abscess in the wall of the wound and the relief that followed the evacuation of the pus and the thorough draining of the abscess cavity seemed to render this supposition unlikely.

After a rather prolonged convalescence the patient made a complete recovery, although a moderate leukocytosis persisted and as late as January, 1914, when the last count was made, the white blood cells were 12,850 and the differential count was polymorphonuclears 52 per cent., lymphocytes 25 per cent., large mononuclears 15 per cent., transitionals 8 per cent., basophils 2 per cent.; that is to say there is still a moderate lymphocytosis. Since his recovery he has felt strong, has developed a hearty appetite and has gained in weight until the record of January was 186½ pounds, which has caused him some alarm lest it might continue to increase. His working capacity, he thinks, is better than it has been for a number of years past although the amount of work that he accomplished in that period was something extraordinary.

The interesting features of this case are first the comparatively brief course, two and one half years; the severe paroxysms of pain which can be ascribed to hemorrhages not only from the gastrointestinal tract but also from the kidneys; the large size attained by the spleen in the short time; the absence of any sign, macroscopically, of change in the liver at the time of the operation; the prolonged and complicated postoperative period, and the ultimate apparent recovery. The very complete pathological report was made by Prof. W. M. L. Coplin.

The spleen was 25.5 cm. in maximum length, 17 cm. in breadth and from 7 to 8 cm. in thickness at different parts. There was in addition, a reniform mass of splenic tissue upon the hilum measuring 10 cm. by 7.5 cm. The spleen weighed 1440 grams, practically the weight of the normal liver. The capsule was thickened; the consistency was firm. The surface of the spleen was pinkish red, fairly uniformly dotted with round or oval granules slightly lighter in color. Spreads of fluid were stained for bacilli and examined by the dark field microscope but no organisms were found. Rabbits and guinea pigs were inoculated in various ways but the results were negative. The capsule, the capsular septa and the fibrous septa were not increased. The finer reticulum was increased particularly around the blood vessels and in the hyperplastic lymphoid areas, which may be regarded as altered Malpighian bodies. In the center of some of these masses it was projected as a clearly stained band of filament spreading out and sometimes occupying almost the whole of the center. The most striking features are the altered Malpighian bodies sometimes reaching the size of 4 or 5 cm. in diameter, consisting of a centrally or excentrally placed blood vessel around which is an extreme quantity of fibrous tissue and closely packed masses of cells almost exclusively of the lymphoid type. At the periphery the cells are closely packed, suggesting a very rapid central growth. Diagnosis: Splenomegaly. "Indefinite as such a diagnosis must be it is hardly possible to be more specific except to say that it is not of malarial type, is not of the usual Hodgkin's type but probably most closely resembles what Banti has termed hemolytic splenomegaly, morphologically conforming to the leukocytic forms" (Coplin).

Case 2. Dr. A. F. D. was referred to me by Dr. Emery Marvel with the diagnosis of Banti's disease. He was suffering from weakness, palpitation and dyspnea. He had hay fever from the age of eight years, and had several attacks of supposed appendicitis at the age of thirty-three years and thirty-six years; pneumonia at the age of forty-one, and he has suffered almost constantly from asthma. This did not prevent him from practicing surgery very actively and successfully. He always had cough and expectoration in the winter time and had suffered from some edema of the legs, worse at night, for about one year. His appetite was good, his digestion normal, his bowels regular, circulation fair and his weight, 158 pounds, was the highest that he had ever weighed. One and a half years ago he had a severe attack of melena lasting about four days. This was followed by some sort of infection, the temperature reaching 105°, and he felt weak and miserable all winter. Blood was tested at this time and the hemoglobin was below 50. He recalls at the age of twelve years a severe attack of intermittent fever supposed to be malaria. For the past three years he has been able to feel his spleen and last summer, 1913, he had a second slight hemorrhage from the bowel.

Aside from the marked pallor and anemia there was a hemic murmur over the heart, slight hyperresonance and prolonged expiration, and in both lungs numerous sonorous râles especially just over the heart. There was dullness over the manubrium, suggesting some enlargement of the thymus gland, and the arrangement of the pubic hair was characteristic of status lymphaticus. Aside from the greatly enlarged spleen which extended to the level of the umbilicus and to the median line there was nothing abnormal in the abdomen. The upper border of splenic dullness commenced at the seventh rib. The hemoglobin was 38 per cent., red blood cells 3,180,000, white blood cells 3400; polymorphonuclears were 70 per cent., lymphocytes 20 per cent., large mononuclears 7 per cent., transitionals 3 per cent., no nucleated reds, nothing that suggested parasites. The blood pressure was 130 and 60. The Wassermann reaction was negative but nevertheless he was given an intravenous injection of neosalvarsan in the hope that it might benefit the anemia and perhaps help the general condition. This was followed by a reaction, the temperature rose to 103° and remained up for forty-eight hours. The cough was improved and he thought he felt better but there was no actual benefit from the injection. After this the hemoglobin was 35 per cent., red blood cells 4100, white blood cells 2700. There was still an increase in the polymorphonuclear forms to 75 per cent. The fragility of the corpuscles was between .29 and .34 per cent. in sodium chlorid solution. I strongly advised an operation but the patient decided to delay.

He returned home and for a month, in spite of his condition, was very busy with his practice, doing in that time between twenty and thirty major operations. He then had a very severe attack of hematemesis and melena and was greatly exhausted. He decided to go to Rochester, Minn., where Dr. William Mayo agreed with the treatment suggested. Before, however, the operation could be performed a second hemorrhage occurred leaving him extremely exhausted. As the case seemed very desperate Dr. Mayo finally decided to operate as a last resource and the spleen was accordingly removed. He survived the operation for three days. This information was given to me by his wife and I have not any report upon the condition of the spleen. It is my feeling in this case that, had the operation been performed earlier, the chances of ultimate recovery would have been measurably greater.

Case 3. S. E., forty-two years of age had always been well until the fall of 1913. She then suffered from some digestive disturbance and went to Florida where a physician made the first abdominal examination and found an enlarged spleen. She steadily lost weight and strength and returned to Philadelphia and came under my care at the Presbyterian Hospital in January, 1914. At the examination the most important finding was a large hard, apparently nodular mass extending from the border of the left ribs obliquely downward and to the right. It moved with respiration, was not tender and gave no fluctuation. Dullness above began at the sixth rib in the midaxillary line. The mass could be palpated bimanually. The tumor on heavy percussion gave a loud tympanitic note. Liver dullness was at the sixth rib. The liver was not palpable. The heart and lungs were normal. On *x*-ray examination an extraordinary distortion of the stomach was observed, so that the pyloric outline was completely obliterated and it appeared as if the stomach was bifurcated at the lower end. This was due to the dislocation to the right, as a result of the splenic mass, because after the spleen was removed the stomach returned to its normal position. The gastric contents were normal on several examinations. The urine on admission contained a doubtful trace of albumin and numerous urates.

About one month after admission while we were discussing the propriety of an operation and had practically decided to perform it, the patient had a violent attack of hematemesis with melena. The blood which had ranged from 4,200,000 to 4,800,000 sank suddenly to 1,700,000. The white blood cells that, contrary to the usual rule, had shown an excess of leukocytes (between 16,000 and 19,000) increased to 61,000. The patient very gradually improved and it was finally decided to operate in April. The operation, performed by Dr. John H. Jopson, was made difficult by adhesions and the tendency to hemorrhage. The tip of the pancreas was adherent to the spleen and it was necessary to remove it with that organ. Convalescence of the patient was exceedingly prolonged and complicated by excruciating pain chiefly in the sacral region. The leukocytes remained high, at one time reaching 82,000, but the differential count throughout showed an excess of polymorphonuclear forms and at no time gave any suggestion of leukemia. There was a gradual improvement in the quality of the blood until in July the red cells had reached 3,830,000. The hemoglobin at this time was 49 per cent. and the white blood cells 46,600. A Wassermann, taken before the operation, was reported negative. Blood cultures taken after the operation were negative. She developed acetonuria, had vomiting and extreme prostration shortly after the operation, but this disappeared after the alkaline enteroclysis.

The patient is still suffering from pain in the back but this is gradually improving. I believe the prospect of complete recovery is satisfactory. The spleen weighed 1100 grams, much to the surprise of Dr. Jopson who had predicted a much greater weight. The case is atypical in that leukopenia was not present. Otherwise it was in all respects characteristic of Banti's disease.

Whether it is necessary to separate those cases of Banti's disease with leukopenia from cases of Banti's disease with leukocytosis, or whether the latter do not come under the class of Banti's disease, I believe at the present time we are unable to say. Discussion at any rate is fruitless, as fruitless, indeed, as the discussion regarding the relation of the spleen to progressive pernicious anemia. In a condition which has at least the common feature of splenomegaly with Banti's disease, that is Vaquez' disease, the leukocytes are sometimes normal or slightly low and sometimes considerably increased without apparently modifying either the diagnosis or the course.

It may be worth while to devote a few words to the nature of this disorder. At the present time we are able to say only that Banti's disease is a morbid condition whose manifestations are in the spleen and probably the result of some disturbance akin either to a chronic inflammation, probably not parasitic in type, or to a new growth; that this change occurs with extreme slowness; that in the course of this change some toxic substance is produced which acts upon the liver as other toxic substances do to produce cirrhosis; that the dangerous manifestations, that is the ascites and cachexia, are largely the result of this cirrhosis; and that death may be ascribed to the same cause. Whether there is a toxic or infectious substance developed, that in some way antedates the changes in the spleen and is responsible for them as Carro believes, it is at present impossible to say. Such an assumption is merely made to explain the condition of the spleen and there are no clinical or other morbid manifestations to indicate its existence. The only point that seems to bear upon this is the existence in a few cases of syphilitic infection (Luzzatti). We are so prone to ascribe every sort of chronic disease after a syphilitic infection to its effect that I think sometimes we are in error. It would be necessary to prove that a larger proportion of patients with Banti's disease have suffered from syphilis than occurs in general adult life. Statistics are at present impossible to obtain, but I think it is fair to conclude that this disproportion does not exist. Therefore there is no reason for assuming that syphilis is responsible for splenomegaly even although a positive Wassermann reaction can be obtained unless the disease yields to antisyphilitic treatment, as Schmidt reports occurred in his case. A positive reaction is exceedingly uncommon in Banti's disease. In the three cases that I report it was negative. In one case salvarsan was given without any beneficial results. This of course proves nothing but as two of the patients were men and one of these a phycian, and as they both frankly discussed the question of syphilis and stated that they had never even suspected a syphilitic infection, and as they both were married and had healthy children, I think syphilis was excluded in their cases as well as it can be in any case and there was no more reason to suspect it in the third case.

The treatment is apparently definitely established. No drug has hitherto been discovered that has any effect upon the disease. All the drugs commonly given in chronic disorders, arsenic, mercury, iodids, have been tried exhaustively and have failed completely. Banti, in his original article, advocated splenectomy. This appears to be a specific, for the patients become permanently well, at least of this disease. The operation appears to be of the severest character and the sequelæ are nearly always alarming. I do not believe that it should be done after a severe hemorrhage any more than I believe that operation should be done after a severe gastric hemorrhage from ulceration. I believe that the prognosis is much better on medical treatment, that is, rest, opium and subsequently iron, after such a hemorrhage than it is after operative treatment, and although one can not form any opinion upon two cases, nevertheless I am at the present time prejudiced by the fact that the patient who was kept in bed under the influence of morphin for weeks and given large doses of tincture of the chlorid of iron until the blood was restored to about four fifths of normal before the operation did better than the other patient who, I am told, was almost exsanguinated when the spleen was removed. The time to operate is, I believe, whenever the patient is in sufficiently good condition to stand it. The earlier the better and I can only regret in two of the cases that the operation was not done sooner than it was.

Banti attempts to explain the results of splenectomy by the supposition that it is not necessary for the hemolytic agents to be located in the spleen. Any hemolytic agent in the circulation may act upon the spleen and, if not very powerful, upon the spleen alone. In such cases splenectomy neutralizes or prevents the action of the hemolytic agents and hyperhemolysis does not occur. Bayer believes that the spleen regulates iron metabolism and prevents hemolysis. It also probably furnishes a hormone that depresses the automatic or sympathetic system. This is largely theory, but if the spleen has any definite relation to hemolysis we may regard Banti's disease and Vaquez' disease as representing hyper- and hypohemolytic functional activity respectively. But in Banti's disease some other factor must produce the cirrhosis of the liver. However, granted hyperhemolysis and some other factors, it is obvious that the only proper treatment is the removal of the organ causing them, providing that it is not essential to life, and the spleen is not. Therefore all agree in urging splenectomy, and at the earliest stage of the disease. Among the more recent to express this view are Umber, Luzzatti, Carro, Grdlewski, Grützner and Stevenson. The dangers of delay are urgent; the dangers of the operation, aside from the condition of the patient are only adhesions and hemorrhage from the tortuous splenic vessels. A few cases apparently due to trauma have been recorded (Wilamowski).

The disease may occur at an early age, and D'Espine has reported two cases in young children associated with rachitis, and Finkelstein another, but in old persons it is extremely rare, according to Wolfe. Some have supposed that occasionally malformations are responsible and Masuda has reported a case in which a patulous umbilical vein existed but the relation is not clear. In this connection, however, the existence of a symptom complex due to thrombosis of the splenic vein, that resembles Banti's disease so closely that the differential diagnosis is almost impossible, must not be forgotten. Cases have been reported by Oscow and Momm. Agenius, almost alone believes that a variety of conditions may give rise to the symptom complex, particularly certain forms of cirrhosis of the liver with great enlargement of the spleen.

More difficult to understand are the relations of Banti's disease to the hemolytic anemias and hemolytic jaundice. The symptoms of these conditions are not particularly like those of Banti's disease, but the blood picture may be almost identical and they seem to yield as readily as splenectomy. Eppinger and Mosse urge this operation in all cases of pernicious anemia with increased hemolysis of the blood. This treatment is not based upon a definite knowledge of the splenic function but is largely empirical. In hopeless cases various plans are tried and if a success occurs there is ready imitation. One would not of choice attempt such a grave operation as splenectomy upon a case of pernicious anemia and yet the results seem to justify it.

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DISCUSSION.

Dr. John H. Jopson, Philadelphia: The operation of splenectomy dates backward, according to Bland Sutton, to very remote times. He quotes Pliny as saying that the spleen is sometimes a hindrance to runners, and that the ancients sometimes burned it away from those animals which were discommoded by it. It is also a tradition still cherished that the Romans removed the spleen from some of their gladiators to increase their endurance. At the present time there are a number of indications for splenectomy. Some are well established, as injuries, wandering spleen, malarial splenomegaly, cysts and tumors; others are rare, as infarct, abscess, anemia, venous thrombosis, and tuberculosis. And now an ill defined but enlarging group of hemolytic diseases are being included among conditions indicating splenomegaly, including Banti's disease or splenic anemia, splenomegaly of the Gaucher type, hemolytic jaundice, pernicious anemia, hypertrophic cirrhosis and even catarrhal jaundice, where acute yellow atrophy impends. Eppinger reports ten cases of the last-mentioned diseases benefited by splenectomy, and argues that a curative action may be anticipated wherever blood destruction obtains as a prominent symptom. The increased resistance of the red blood cells, the great increase in the regenerative powers of the bone marrow and the increased production of erythrocytes have been repeatedly noted in cases of pernicious anemia after splenectomy, where the spleen is probably only a secondary agent but an active one in the causation of anemia, by causing rapid destruction of red blood cells as well as inhibiting bone marrow activity (Huber-Stengel).

The close connection of the spleen with digestion and metabolism, its reputed ability to retain iron extracted from food, its influence on the hepatic functions, on nutrition, and the excretion of nitrogen, on the production of pancreatic ferments, no less than its direct relation to the formation and destruction of the corpuscular elements of the blood need only be mentioned to indicate what an important link in the chain of a number of diseases it may be considered. While not always a primary cause of disease it seems very probable that it may be the main factor in preventing recovery by a persistence in the performance, tremendously exaggerated, of what was originally a normal function. Only on this ground at present can investigators explain the beneficial results of splenectomy in the early stages of such a condition as pernicious anemia, as well as in some other hemolytic conditions.

In splenic anemia, or Banti's disease—the names are usually used interchangeably—the curative action of splenectomy is well established. Our patient continues to improve and there is ground for hope that recovery, while gradual, may be complete, as it usually is, when the early stages of danger from gastrointestinal and wound hemorrhage, peritonitis, thrombosis, and secondary infections are passed, and when recovery ensues it is permanent. Certain lasting lesions of liver and kidney can not be cured in cases operated on during the last stages of the disease. The mortality here is tremendous, but even in cirrhosis some benefit may occasionally be derived by combining Talma's operation with splenectomy.

The mortality of operation in Banti's disease is, according to Rodman and Willard's careful paper, about twelve and a half per cent. In recent years it has fallen very much with improvements in technic, and in the hands of those of most experience does not exceed five to ten per cent. in carefully selected cases. Bland Sutton successfully removed the spleen from a girl of five years for anemia with splenic enlargement, and the patient was well eighteen years later. So far as the subsequent health of the individual is concerned he believes the spleen is like an enormous lymph gland, and no graver influence attends its removal than the excision of large lymph glands from the neck, axilla or groin. When the patient recovers nothing suggests that he is spleenless.

The medical history of the one case of Dr. Sailer's, in which I performed the operation of splenectomy, has already been detailed by him. Certain points of surgical interest may be emphasized, some of them common to the operation itself, others of occasional occurrence. The operation was decided upon when the patient was on what might be described as the up curve of a wave of improvement, such as alternates with periods of depression, or exacerbation of the symptoms of Banti's disease. In this respect, as in some others, the course of these cases of splenic anemia is not unlike cases of hyperthyroidism, in which, as is well known, marked periods of amelioration of symptoms occur, favorable to operative intervention. Before a time for operation could be set, a violent set-back took place, marked by very free gastrointestinal hemorrhage in which the patient nearly lost her life. Some weeks elapsed before the anemia and other symptoms could be controlled and the patient again be brought to a stage where such a severe operation could be contemplated. Finkelstein states that operation is unwise when the percentage of hemoglobin is below thirty or forty and the red blood cells number less than two million.

The technic of operation did not differ from that usually adopted and no special difficulties were encountered. Hemorrhage from the large, thin walled and very numerous veins of the pedicle is controlled during the operation by the use of protected clamps, applied after the organ has been delivered through an incision along or through the left rectus, and turned turtle to expose its vascular pedicle. In a few cases dense adhesions, the result of perisplenitis, make this step difficult or impossible, and operation sometimes has to be abandoned owing to the firmness of fixation of the organ (once in eighteen cases—Mayo). The difficulty of splenectomy is, as Finkelstein expresses it, in direct relationship to the number of adhesions and is in inverse ratio to the size of the organ. Large spleens, even large malarial spleens, in which affection splenectomy is attended by thirty-four per cent. mortality when the organ is normally placed, are easily removed when displaced downward, or floating, into the hypogastric or iliac region of the abdomen. The spleen from our patient measured 23.5 cm. by 13.2 cm. by 8 cm., and weighed 910 grams. The postoperative course was stormy, to say the least. Hemorrhage from the gums began the same night, and oozing from the wound in the abdominal wall and also from the bed of the spleen gave rise to free drainage. Fortunately the wound had been drained at the time of operation. Tachycardia, delirium, and some of the cardinal symptoms of hyperthyroidism (and the patient indeed presented much the classical picture of that disease minus the exophthalmos and goiter) were present. Prompt improvement followed proctoclysis and hypodermoclysis and morphin. The wound oozed for several days, and six days after the operation opened up sufficiently to allow the escape of omentum and several loops of bowel. This alarming accident, due to lack of any desire of the tissues to heal, demanded reoperation, return of abdominal contents to their natural habitat and resuture of the wound with more drainage. There was absolutely no evidence of any infection. Again we resorted to hypodermoclysis and the other measures mentioned for a threatened collapse. A small patch of bronchopneumonia was found some days later. This quickly resolved, but the temperature was more or less continuously elevated for two months after the operation, long after the wound was solid, and the hyperleukocytosis persisted during her entire stay in the hospital, ranging as high as 82,000, and amounting to 46,400 at the time of her discharge, three months after operation. Bleeding from the gums was of frequent occurrence, and the poor patient was racked with spasms of pain in the lumbar region and in other parts of the body, but especially in the back.

Postoperative leukocytosis is a very constant symptom, and it is stated under the authority of Banti, Senator and Wolff, that it may be five years before the normal differential count is established. Once cure is obtained it persists, as shown in cases examined as late as nine years after operation and found with normal blood pictures. Polycythemia may follow splenectomy for any lesion. The continued elevation of temperature was somewhat unusual, although it is mentioned by some and, taken in connection with the marked leukocytosis, seemed to argue for an area of infection somewhere, although none could be discovered by painstaking examinations. There is marked lessening of resistance to infection after splenectomy. One of Bland Sutton's patients, operated on for wandering spleen, developed a pus collection, which discharged itself through the rectum, and another case repeatedly developed both empyema and abdominal abscess.

I have knowledge of another case of Banti's disease, operated on by a distinguished colleague, in which the wound refused to heal and the patient finally succumbed. Pain in the long bones occurs in twenty-five per cent. of cases after splenectomy. In Sailer's series Dr. DaCosta's case had pain in the vertebræ and extremities, ribs and sternum. This pain is usually attributed to temporary hypertrophy of the bone marrow, and a passing enlargement of the lymphatic glands is also evidently hypertrophic in character.

Dr. David Riesman, Philadelphia: Dr. Sailer has brought a timely subject before us. I have had the opportunity of seeing several cases of Banti's disease. Nosebleed was the only type of hemorrhage in two of these cases. In one, it was the first symptom of the disease. A big feature in one of my patients, a man of fifty years, was great variability in the size of the spleen. Very acute swelling is accompanied by pain, fever and prostration. The clinical picture, to one not familiar with the case, suggests an attack of malaria. Though in this man, the spleen fills the entire left side of the abdomen, he enjoys good general health, takes long automobile rides and attends actively to business. Banti's disease is not uncommon in children, and I have knowledge of two cases in which the spleen was successfully removed. With regard to etiology, an observation made first by a Greek physician and afterwards by several other medical men practicing along the Mediterranean coast, is of interest. In apparently typical cases of Banti's disease, they found on puncture of the spleen the organism of Kala-azar. Some time ago there was a Greek patient with Banti's disease at the Philadelphia General Hospital. I had splenic puncture under consideration, but refrained from doing it, when I heard of a death from it in another city. In view of the unknown nature of the disease, it is probably advisable to look for protozoan parasites in the spleen immediately after its removal by operation.

RECENT ADVANCES IN DIAGNOSIS IN PEDIATRICS.

BY JOHN F. SINCLAIR, M.D.,
Philadelphia.

(Read in the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

From among a number of new methods of diagnosis which have been suggested by various observers within the past year, I have selected three for presentation at this time, because of their paramount importance. In each instance the procedure proposed is an advance upon our former means of reaching a diagnosis in the given disease, and each of the three diseases is of very frequent occurrence in the practice of every pediatrician.

"The Value of the Blood Picture in the Early Diagnosis of Measles, Especially in Relation to the Question of Isolation," was the subject of an illuminating essay by Dr. William P. Lucas of San Francisco. Previous experimental work had led him to conclude that "during the preëruptive stage of the disease (measles) there is a leukopenia involving the polymorphonuclear neutrophils, the lymphocytes, and the large mononuclear leukocytes. This leukopenia develops in five or ten days after inoculation and may be preceded by a transient lymphocytic and a large mononuclear leukocytosis, which is probably lacking or only poorly developed in the severe form of the reaction, but is strongly developed in less severe cases."

The essay to which I have above referred deals with the practical application of this conclusion, as shown in the isolation of cases before the really infective period of the catarrhal stage had developed, wholly on evidence deduced from the blood count.

The report covers two ward epidemics and embraces a series of nineteen cases in which nine of the patients came down with measles and ten were controls, which were open to the same infection but did not develop the disease. It is interesting to note that the study was carried out on infants who were in the hospital as special-feeding problems. Such infants are supposedly especially prone to the infection of measles and bear the disease badly when attacked.

Daily white counts were taken every morning of all of these cases and if the count showed any marked variation from the count of the previous day a second count was made in the afternoon. Smears were taken when the white counts were made and these were carefully studied as a check on the results of each day.

A careful study of the protocols and charts exhibited shows that there was an early change in the blood picture. The ordinary predominance of lymphocytes which is normally found in infant's blood was changed to a relative increase in the percentage count of polymorphonuclear neutrophils. With the total leukopenia the ratio of lymphocytes to neutrophils is reversed since the lymphocytes suffer a far greater reduction than do the neutrophils.

Normally the percentage of lymphocytes in infant's blood varies from about fifty-five to seventy per cent. of the white blood cells, while the polymorphonuclear neutrophils vary from about twenty-five to thirty per cent., and the large mononuclears from about eight to fifteen per cent.

About one week before the earliest clinical symptoms of infection with measles appear, *i. e.*, Koplik spots, coryza or cough, a beginning reversal of the blood picture may be noted. The actual reversal occurs at least forty-eight hours before definite symptoms are manifest. The reversal of the blood picture is a much more reliable feature for diagnostic purposes than the accompanying leukopenia. For while the latter is definite and constant it may appear early (eight days before the appearance of physical signs) or may be so delayed as not to appear before the physical signs are visible.

In addition to the above there is from the beginning of the reversal of the blood picture an ever-increasing number of disintegrated cells. These disintegrated cells are probably not specific, but must be taken as part of the blood picture, and as a definite factor in establishing an early diagnosis. Lucas describes them as "large swollen cells with protoplasm breaking up and the nucleus, as it were, waterlogged or breaking up into fragments. The shape varies from round to oval with no sharply defined outline. Granulations are abundant, and they can be seen separating from the nuclei."

Lucas believes that this method of diagnosis was the means of cutting down the probable incidence of measles in his wards by twenty-five to fifty per cent. He had no secondary cases and believes that this fact is to be attributed to early diagnosis and consequent early isolation.

Friedlander (Alfred) and Wagner (E. A.) of Cincinnati have published two papers on the "Diagnosis of Whooping Cough by the Complement Deviation Test." With a specially modified technic they believe they can diagnose whooping cough in the catarrhal stage as well as in the paroxysmal and convalescent stages. Their series of cases showed eighteen with a typical whoop, all positive; sixteen normals, all negative; twelve in the catarrhal stage with eleven positive and one negative. In all of these cases, including the one negative, there later developed a definite whoop. One case in which there was no whoop but which was otherwise typical gave a positive reaction.

Stress is laid by the authors on the fact that several patients admitted to their hospital wards as having bronchitis were removed to isolation on the strength of a positive complement-deviation test, although no whoop or vomiting had occurred, with the consequence that the open wards remained free of pertussis.

The technic of the test is to be found in the original article.

The writer following Leopold and Rubin has elaborated a method of diagnosing vulvovaginitis by means of the electric-lighted female urethroscope which he believes is a marked advance over the methods previously employed.

Eighty-three infants admitted to the Babies' Hospital of Philadelphia were examined with the female urethroscope. All were under three years of age. Upon arrival at the hospital a vulvar smear was made in every case, and the bacteriological findings noted. Only the negative cases were admitted to the general wards. All positive and suspicious cases were sent to isolation wards for further study. The examination with the electric-lighted female urethroscope was made as far as possible within twenty-four hours and a vaginal smear was taken and sent to the laboratory for bacteriological diagnosis.

Of the eighty-three patients examined, sixteen or nineteen per cent. were found to be infected with the gonococcus at the time of admission to the hospital or to present highly suspicious evidences of such infection.

In seven cases which were negative upon admission, the patients subsequently developed vaginitis of specific origin. . Five of these had been in the hospital from five weeks to thirteen months, and had shown no evidences of vulvovaginitis on repeated examinations. They were sent to a convalescent home in the country between June 6 and June 26, and no vaginal discharge was noted among the infants until July 20, when one of the babies was reported to have gonorrheal ophthalmia, and examination disclosed also a specific vulvovaginitis. From this time to July 27, four additional cases of Neisserian infection were discovered.

Of the remaining two cases one was reported as negative bacteriologically and clinically on August 11, but positive two days later. The other baby was negative when admitted on July 30, and did not present positive evidences of vulvovaginitis until August 13.

Upon the day of admission, five cases out of the series of twenty-three were negative according to the report of the vulvar smear, but proved to be positive or highly suspicious upon subsequent endoscopic examination and study of the vaginal smear. In other words 21.74 per cent. of the total number of cases in this series would have escaped detection without the use of the electric-lighted female urethroscope.

Only seven babies, or thirty per cent. of the cases, showed any visible signs of discharge upon admission.

With measles ranking as the most infectious disease that is commonly met with in childhood; with whooping cough responsible for over ten thousand deaths in the United States every year, of which ninety-six per cent. are of children under five years of age; and with vulvovaginitis widespread especially in our larger urban communities, surely it is imperative that we should have and employ methods of diagnosis such as have been reported herewith, and more especially so because these recent diagnostic advances admit of early isolation before the given "suspect" can be of danger to others.

DISCUSSION.

Dr. Joseph H. Barach, Pittsburgh: It has been stated by Dr. Sinclair that by means of the complement fixation test a diagnosis of pertussis may be made as early as the first time the child whoops. I showed a number of years ago, that by means of the leukocyte and differential blood count, a diagnosis of pertussis may be made as much as fourteen days and almost always within a week of the time that the child first whoops. In that case the morphology of the blood is even an earlier method of diagnosis than the complement fixation test. I would like to say that I have been able to make a diagnosis correctly in almost one hundred per cent. of the cases which I have seen within the last five years. As to the early diagnosis of measles by means of the reversed blood picture and the leukopenia, I believe if frequent blood examinations were made in many of the children's diseases, that in quite a large proportion of the acute diseases would we find this same leukopenia. I have gained this impression from my recent work on the morphology of the blood in epidemic parotitis as well as from any observations in cases of pertussis.

Dr. John A. Kolmer, Philadelphia: In the early diagnosis of whooping cough a total leukocyte count and a differential leukocyte count are of value as a leukocytosis and lymphocytosis are early changes in this disease. It is, however, necessary to know the normal blood picture of children at different ages before this method becomes reliable.

Complement fixation in pertussis has been shown experimentally by Bordet and later by Wollstein. The difficulty of isolating the real bacillus of this disease for the purpose of preparing the antigen is a drawback to the widespread adoption of the test.

In the diagnosis of gonorrheal vaginitis I would emphasize the value of vaginal washings which are centrifuged and smears prepared of the sediment. This technic will show pus cells and gonococci which would otherwise escape detection.

ADMINISTRATION OF FRUIT ACIDS.

The administration of the salts of the ordinary fruit acids is useful whenever it is desired to increase the alkalinity of the blood and diminish the acidity of the urine. Important investigations indicate, however, that it is scarcely feasible to produce any very marked effect on the alkalinity of the blood in this manner. If the physician believes that the alkalinity of the blood is an important factor in the recovery from gout and rheumatism, the administration of the salts of fruit acids is appropriate. Citrates should be preferred to tartrates, for the latter are imperfectly converted to carbonates and, when given in large quantities, may cause irritation of the kidneys.—*Jour. A. M. A.*, Aug. 1, 1914, p. 420.

THE DURATION OF INFECTION IN SCARLET FEVER.

BY MAURICE OSTHEIMER, M.D.,
Philadelphia.

(Read in the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Just how long a patient convalescent from scarlet fever may remain infectious has long puzzled physicians. The answer formerly given was that of McCollom[1] that "there is no doubt, during the active stage of primary desquamation, that scarlet fever is infectious." This stage usually lasts five weeks and may last seven, eight, nine or even ten weeks. That this view is no longer universally held is shown by the statements of Welch and Schamberg,[2] who say that "the desquamating scales are probably not contagious"; Igl,[3] who says that "as a rule no infection follows during the stage of desquamation"; Lauder[4] and Kulhavy,[5] who say that "desquamation is not contagious"; Chapin,[6] who says that "the exfoliating epidermis is probably not infectious"; and Pugh [7] who concludes that "evidence is decidedly strong that the infectivity of scarlet fever lies in the throat and nasal cavities and not in the desquamating cuticle."

In America the patient with scarlet fever is kept isolated for at least five weeks, McCollom[1] giving the average as about fifty days, while the quarantine minimum in France is forty days and in England and Germany it is six weeks. Goodall and Washbourn[8] give it as the general opinion that "the desquamating cuticle is no longer infectious after four or five weeks." Ker[9] suggests altering the accepted minimum period of isolation for scarlet fever from six weeks to five, as a great step in advance.

While desquamation occurring on the hands and feet following some weeks after an illness with fever and sore throat will usually be due to scarlet fever, it must not be forgotten that cases of desquamation resembling that of scarlet fever may occur, due to other causes than scarlet fever, such as the injection of antitoxin or other serum, the administration of drugs (quinin, mercury, belladonna, salicylic acid, antipyrin, opium, chloral, etc.) or the occurrence of other infectious processes, such as rheumatism toxemia, septicemia, malaria, typhoid, measles, chicken-pox, smallpox or vaccinia. Nor should we forget that type of desquamation which is found on the palms of the hands and soles of the feet, in tiny oval and crescentic areas, due to excessive perspiration, with hard or dirty work, the application of local irritants, etc. Then, again, there are individuals whose skin is but infrequently washed who show marked desquamation, especially upon the arms and legs.

In this connection the question of the so-called hospital return cases naturally arises. In England the time limit usually allowed for the occurrence of return cases is six weeks after the return home of the primary case from the hospital. In Philadelphia we put no time limit upon return cases, but investigate each case to discover, if possible, some other source of contagion in the secondary case. It is with the permission of Dr. A. A. Cairns, chief medical inspector of the Bureau of Health of Philadelphia, that we give the following statistics for the past two and one half years.

Table. Date of Occurrence of Return Cases.

	One day.	2 to 7 days.	8 to 15 days.	16 to 30 days.	1 to 4 mos.	4 to 8 mos.	Total.
1912	2	31	30	10	4	0	77
1913	2	24	23	22	8	2	81
1914, ½ year	1	12	15	3	4	0	37
Total	5	67	68	35	16	2	195

Thus 140 cases (71.8 per cent.) occurred within fifteen days after the return of the first case from the hospital. The longest interval recorded between the primary and secondary cases was 224 days.

During 1912, 2872 cases of scarlet fever were reported; during 1913, 3400 cases; and during 1914, (one half year) 1439, making a total of

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[1] John H. McCollom: Osler's "Modern Medicine," Vol. 2, p. 362.

[2] W. M. Welch and J. F. Schamberg: "Acute Contagious Diseases," p. 355.

[3] Igl: Abstract in *Archiv für Kinderheilkunde*, 1906, 44, 373.

[4] Lauder: *Lancet*, 1904, I., p. 712.

[5] Kulhavy: Abstract in *Zentralblatt für Kinderheilkunde*, 1914, 19, p. 296.

[6] C. V. Chapin: "Mode of Infection and Duration of Infectious Period in Scarlet Fever," 1909, p. 49.

[7] W. T. G. Pugh: *Lancet*, 1905, 1, p. 273.

[8] E. W. Goodall and J. W. Washbourn: "Manual of Infectious Diseases," 1908, p. 81.

[9] C. B. Ker: *Edinburgh Medical Journal*, 1914, n.s. 12, p. 10.

7701 cases reported during the two and one half years. In 1912 there were 77 hospital return cases (2.68 per cent.); in 1913, 81 (2.4 per cent.); and in 1914 (one half year), 37 (2.58 per cent.). This gives a total of 195 return cases, or 2.53 per cent., of the entire number of cases of scarlet fever reported during these two and one half years. But in 1912 only 2064 cases went to the hospital for treatment; in 1913, 1742; and in 1914 (one half year), 832; making a total of 4638. The 195 hospital return cases were 4.2 per cent. of the total number of scarlet fever patients sent into the hospital.

Secondary cases occurred in houses from which the first case had been removed to the hospital in 1912, 295 times, (14.29 per cent.); in 1913, 200 times (11.48 per cent.); and in 1914 (one half year) 61 times (7.33 per cent.), a total of 556 cases among 4638 in the hospital (11.98 per cent.); or among 7701 cases of scarlet fever reported (7.2 per cent.).

Secondary cases occurred while the first case remained at home, in 1912, in 133 out of 808 cases (16.46 per cent.); in 1913, in 194 out of 1658 cases (11.70 per cent.); and in 1914 (one half year), in 125 out of 597 cases (20.93 per cent.), or a total of 452 cases out of 3063 cases remaining at home, (14.75 per cent.), or out of 7701 cases of scarlet fever reported (5.86 per cent.).

Butler[10] reports 28 secondary cases occurring from two to three months after the primary case among 459 cases (6.1 per cent.). Sörensen[11] reports a case occurring seventy days after the onset of the first case. Littler[12] reports a secondary case twelve weeks after the first; Preisich[13] tells of a return case after the primary case had been 102 days in the hospital. Turner[14] speaks of secondary cases occurring in the same house, one 161 days, three 168 days and two 175 days after the primary case. Berry[15] mentions return cases from two to eleven months after the onset of the primary case.

Woollacott[16] notes that return cases are more rare in summer than in winter, because children remain out of doors more upon returning from the hospital. Our statistics in Philadelphia corroborate this. Allan[17] lays stress upon the fact that it is always possible that return cases are infected, not by the convalescent returned from the hospital, but in some other manner. McCollom[1] says, "Of 3000 patients discharged, there was a percentage of 1.74 per cent. of alleged return cases." Investigation showed that in many instances there was an intermediate case and sometimes two, so mild in nature as not to attract attention. He believes that many of these cases were not true return cases and were not infected by the convalescent, but by someone else. In searching for the cause of such cases, the probability of milk infection deserves consideration. During the past spring, in a suburb of Philadelphia, eleven cases of scarlet fever occurred, all of which were distinctly traceable to milk from one dairy, where our investigations showed two unreported and untreated cases of scarlet fever had been at work in the dairy all through their illness.

Holt,[18] Ker,[19] Welch and Schamberg,[20] and Shick[21] all agree that it is impossible to state when a scarlet fever patient ceases to be infectious. Preisich[13] notes that patients may return home and continue to desquamate without causing return cases, while others, without any sign of desquamation, cause return cases. That the infectivity rate in cases which have been kept in the hospital two months or more appears to be greater than those detained there for a shorter interval, Greenwood[22] observed. Butler[10] considers a case, which was admittedly infectious after nine months' isolation, not to have ceased to be infectious twelve months or even two years later. "It does not follow that such cases are continuously infectious. There appears to be good ground for saying that the change from a hygienic to a relatively insanitary environment arouses the energy of the infectious agent in scarlet fever." Butler also speaks of the intermittency of the infection in scarlet fever. It is infectious during the active stage and then again later. He believes that, under varying but occasionally recognizable conditions, persons who have recovered from scarlet fever are capable of conveying the infection to others after intervals, frequently of prolonged duration, when apparently they have ceased to be infectious. Kokall[23] believes that a scarlet fever patient remains undoubtedly infectious for some time after his illness. This time can not be stated definitely. Lauder[4] has noted that with a longer period of detention in the hospital, there were just as many return cases as with a shorter period.

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[10] Butler: *Hospital,* 1908-9, 45, pp. 555 and 582.

[11] Sörensen: Abstract in *Jahrbuch für Kinderheilkunde,* 1907, 66, p. 115.

[12] Littler: *British Medical Journal,* 1905, 1, p. 355.

[13] Preisich: *Berliner kinische Wochenschrift,* 1909, 46. p, 1158.

[14] Turner: Proceedings of the Royal Society, 1911-1912, V, Epidemiological Section, p. 162.

[15] Berry: *Lancet,* 1907, 1, p. 88.

[16] Woollacott: *Sanitary Record,* 1907, n.s, pp. 177, 203, and 226.

[17] John Allan: *Medical Times,* 1909, 37, p. 1035.

[18] L. E. Holt: "Diseases of Infancy and Childhood," 1897, p. 890.

[19] C. B. Ker: "Infectious Diseases," 1909, p. 73.

[20] Welch and Schamberg: *Loc. cit.,* p. 356.

[21] B. Shick: Pfaundler and Schlossmann, Vol. 2, p. 310.

[22] Alfred Greenwood: *Hospital,* 1906-7, 41, p. 119.

Holt[1] says, "It is possible for purulent discharges to convey the disease during a period of several months." He refers to a secondary case caused by a purulent nasal discharge after eleven weeks; and to an outbreak of scarlet fever following the opening of a postscarlatinal empyema in a surgical ward. With Newsholme[24] we believe that cases of protracted and recrudescent infection are relatively infrequent. They are most often, though not always, associated with nasal and aural discharges. Infection may become dormant, to be again aroused into activity by circumstances such as cessation of isolation, bathing, catching cold, or other means tending to lower resistance. Infection may occasionally recrudesce, with the recurrence of a mucous discharge. Chapin[6] notes that in a small proportion of cases the infectivity may persist for months. He, as well as Ker and Goodall and Washbourn, noted that prolonged infectivity is often associated with the persistence of the pathologic process in the throat, nose or ear. The secretions of the throat and nose are probably the chief sources of infection. Pugh,[7] who considers the majority of patients free from infection in six weeks, says that it would seem impossible to discover by clinical means the minority who retain infection longer, and it would seem difficult even to differentiate those by whom transmission is likely. Barlow[25] believes that infection lasts only a few days, ten to fourteen days in some instances. Other cases remain infective for months, the infection lingering in the nose and nasopharynx. Arnold[26] considers scarlet fever moderately infectious for two weeks from the onset; adding that the majority of cases cease to be infectious some time during the second fortnight, so that at the end of the fourth week only a small percentage remain infectious. Welch and Schamberg[2] consider discharges from the mouth, throat, nose, ears and open wounds contagious for months. McCollom[27] believes that discharges from the nose and ears of a convalescent scarlet fever patient are undoubtedly infectious. Lauder[4] regards the upper respiratory passages, particularly nasopharynx and pharyngeal and faucial tonsils, as responsible for the reception and propagation of the infection. Ker[19] says the virus remains in purulent discharges from the nose, ears, vulva, suppurating glands and wounds. It may remain concealed high up until the occurrence of some fresh infection, coryza, cold, etc., which brings it out again. Sexton[28] speaks of a child whose nasal and aural discharges persisted over eight months. On this account Baginsky[29] believes it impossible to keep children in a hospital long enough to exclude all possibility of infection.

Butler[10] describes persons who have not suffered from scarlet fever, who appear to harbor the infection in their tissues in such manner that, while not a danger to others, yet by a critical lowering of their resistance, become the source of their own infection. This is commonly observed after the removal of tonsils and adenoids. Finally, any one who has studied many cases of scarlet fever must agree with Ker[30] that there are persons who act as scarlet fever carriers. Kulhavy[5] and Knöpfelmacher and Hahn[31] both call attention to the probability of carriers explaining the spread of scarlet fever.

CONCLUSIONS.

1. A scarlet fever patient is infectious at

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[23] Kokall: *Wiener kinische Wochenschrift,* 1910, 23, p. 1874.

[24] Arthur Newsholme: Medico-Chirurgical Transactions, 1904, 87, p. 549.

[25] W. N. Barlow: *Practitioner,* 1907, 79, p. 837.

[26] Arnold: *Public Health,* London, August, 1911.

[27] J. H. McCollom: *Loc. cit.,* p. 360.

[28] Lewis A. Sexton: *Archives of Pediatrics,* 1913, 30, p. 360.

[29] Adolf Baginsky: *Deutsche medizinische Wochenschrift,* 1912, 38, p. 746.

[30] C. B. Ker: *Edinburgh Medical Journal,* 1914, n.s. 12, p. 24.

[31] Knöpfelmacher and Hahn: Abstract in *Zentralblatt für Kinderheilkunde,* 1914, 19, p. 297.

least until primary desquamation has ceased (five to six weeks).

2. A scarlet fever patient is also infectious just so long as there persist discharges from the mouth, throat, nose, ears, suppurating glands, other abscesses or open wounds.

3. The occurrence of return cases proves that a convalescent scarlet fever patient may remain infectious or may again become infectious.

4. Therefore it is correct to say that it is impossible to tell how long a scarlet fever patient may remain infectious.

DISCUSSION.

Dr. Henry T. Price, Pittsburgh: As Dr. Ostheimer has mentioned in his closing remarks, there is, at present, no known period of the duration of scarlet fever. There are many cases recorded referring to the long duration and some of these have been mentioned, but the minimum duration is the most important especially from an economic standpoint. Whether or not the contagious element is present with desquamation is disputed, but it is certainly a fact that gloves of desquamated epidermis are saved as curiosities and handled without infection. This is seen daily in Knöpfelmacher's clinic.

It is generally believed that the secretions or discharges from suppurating glands and ears is a cause of the spread of the disease and the Board of Health of Pittsburgh has recently extended the period of quarantine to three months in these cases. The period of quarantine has been reduced from six to five weeks and Dr. Richardson of Rhode Island is carrying out a series of experiments with the quarantine period reduced to four weeks. If this proves successful a great step in advance will be made.

Hospital return cases form a group of interesting patients but to my mind a number of these individuals have been infected from mild cases which have existed undiagnosed or from a cause of infection which has not been removed when the first patient contracted the disease. Then there are undoubted scarlet fever carriers, as exist with other diseases as typhoid fever and diphtheria.

More careful diagnosis is necessary in doubtful and mild cases and one great aid especially in these cases is the blood examination for inclusion bodies. Until the actual cause of the disease has been found we can not regulate the period of quarantine and we must follow out the present rules of isolation.

I agree absolutely with the conclusions presented in the paper under discussion.

Dr. John A. Kolmer, Philadelphia: I wish to emphasize the importance of discharges from the upper air passages in the transmission of scarlet fever. It would appear that the microparasite of this disease resides in the upper air passages and by sneezing and coughing the skin is secondarily infected. Therefore the scales may be infectious during the first weeks of the disease. If the nose remains normal, the contagium apparently dies, if a rhinitis supervenes, pabulum is furnished and the infection lives. In the Philadelphia Hospital for Contagious Diseases great importance is attached to the question of rhinitis, otitis media and suppurative adenitis, and these are contraindications to the discharge of the patients from the hospital.

As the clinically unrecognized case of scarlet fever is a potent factor in the dissemination of scarlet fever, I would draw attention to the value of an examination of a stained smear of blood for leukocytic inclusion bodies. The absence of these bodies is valuable evidence of the absence of scarlet fever in a doubtful case.

Dr. B. Franklin Royer, Harrisburg: I have been interested in the question of prolonged infectivity among scarlet fever convalescents for a number of years, and about ten years ago followed up a considerable number of my discharged hospital patients associated with causing the so-called "return cases," and while in England about that time I studied the "return case" in hospital practice and discussed their occurrence with a number of contagious disease workers while this problem was a live one there. The most elaborate study on the hospital return case was published by Cameron of the Metropolitan Asylum Board of London. Cameron had been released from duty as hospital superintendent for a period of a year or two to follow up and study "return cases" and to act as adviser to the board, and his work, together with that of Newsholme published about the same time, perhaps furnished the basis for the belief that desquamating skin late in scarlet fever is not a menace to those not having had scarlet fever and that morbid nasal mucosa were highly dangerous. Cameron's studies led to the discharging of hospital cases much earlier than had been the custom.

The minimum quarantine period for scarlet fever was definitely fixed at thirty days early in the history of the State Department of Health of Pennsylvania by promulgation of a regulation of the Advisory Board, and most communities now do not extend their dwelling-house quarantine beyond this period unless the disease runs a complicated course. Completion of desquamation is the first guide for the lifting of quarantine but, in the case with prolonged infectivity, the patient may be through desquamating at the end of four weeks. For this reason the state department requires the physician to certify that ear discharges and nasal discharges have ceased as well as to certify that desquamation is complete.

With the occasional case in second class townships, where the ear discharges indefinitely, the department requires the county medical inspector to see the patient and to consult the family physician and agree with him upon some method of taking care of the discharges, the use of an antiseptic irrigation, the burning of cotton, etc., and after agreeing upon these details to arrange for the release of the patient. This usually does not take place for a period of seven or eight weeks or longer after onset.

At one time I might have been willing to subscribe to the views presented, but after having had an opportunity to observe the releasing of thousands of cases from quarantined homes without having numerous second infections follow, I have come to believe that the patient discharged from private house quarantine is not as likely to be a carrier of infection as is the case discharged from the scarlet fever ward of a hospital where chronic rhinitis is common. Much of the rhinitis in the scarlet fever ward is superadded ward infection, and if we were able to so perfect our technic, as advocated by Chapin of this country and Martin of the Pasteur Hospital, cross infection would not occur, this chronic nasal condition would be less noticeable and the return case would be less common.

I am quite willing to subscribe to the view that infection lingers longest in the nasal mucosa and around the turbinates, but I also feel that it may often be harbored in adenoid tissue or in the deep crypts of enlarged tonsils.

Some cases have come under my observation that had apparently been responsible for the infection of others with a history of having had an acute sore throat with swelling of tonsils and without rhinitis. Probably in both rhinitis and tonsillitis some infection lying dormant, deep in the folds of the mucous membrane, had been washed to the surface during the process of inflammation.

Dr. Ostheimer is to be congratulated upon having presented such a practical paper on this interesting subject.

Dr. Henry D. Jump, Philadelphia: I want to relate an incident which will show the long life of the contagious agent and also illustrate how hard it is to determine the source of the contagion. A child, stricken with scarlet fever was removed to a room better suited for quarantine than that in which he was originally. The mother while in the quarantine directed the servants to clean the first room. They did this thoroughly except airing the portieres. These were gotten out again five months later by the maid who put them away. Within a week she was stricken with scarlet fever. The child had no nasal or aural discharge and we felt that the contagion came from the portieres. Had this been a hospital case, the maid would have been considered as a return case, occurring about one hundred days after discharge of the first one.

Dr. Robert N. Willson, Philadelphia: While not a pediatrist, I am especially interested in this paper from two standpoints which concern the internist. First, with regard to the possibility of confusion of actual scarlatinal cases from medicamental or drug eruptions and drug desquamations. I well remember one of the first patients seen by me after entering upon the practice of medicine—one in whose case there existed and still exists a grave doubt whether the Philadelphia authorities placed under isolation a patient with scarlatina or quinin intoxication. The eruption as well as the desquamation that followed were of such a type that a discrimination could not be made. In such a case there may be an injustice done the patient on the one hand or to the public on the other. Secondly, I would refer to the occasional cases of scarlatinal eruption, seen in the middle of septic infections, other than scarlatina. Again, it is important both that the patient shall not be exposed to infection by unnecessary isolation with other scarlatinal cases, and vitally essential that the public should not be exposed to real scarlatina. I have seen a number of instances, one in tuberculosis, and three more recent cases in streptococcic septicemia, of typical recurrent scarlatinal rash, followed by general desquamation, and yet with no real suspicion of the presence of scarlatina. One of these cases was mistakenly transferred to a contagious disease hospital. Finally, there is the question of the danger existing to a patient in a lingering scarlatinal infection, from the viewpoint of the cardiac valves and the kidneys. Many cases of post scarlatinal valvulitis and nephritis do actually occur and it would seem as though one were justified in these instances in assuming that there has remained a bacteriemia which has been responsible for the after-damage. The duration of the scarlatinal infection, streptococcic or otherwise, therefore, is of consequence indeed both to the patient and to the public.

Dr. Alfred Hand, Jr., Philadelphia: The only thing which will scientifically settle the period of infectivity in scarlet fever will be the discovery of the specific cause. When that day arrives I hope it will be shown that the germs are present at least as long as desquamation lasts. Otherwise, the patients can not be kept at rest in quarantine and on proper diet for the five or six weeks now in vogue, but some will be up and out too early and the likelihood of nephritis will be increased.

RADIUM IN CANCER.

Radium can be used successfully to destroy growths on the surface whose entire extent can be exposed to its energy. Extensive growths involving deep structures and disseminated growths are beyond its control, and there is no reason to believe that they will ever be brought within its control. The effects and the limitations of radium in the treatment of cancer are the same as those of the roentgen ray.—*Jour. A. M. A.*, Aug. 29, 1914, p. 787.

HIP DISEASE.

BY JOHN RIDLON, M.D.,
Chicago.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

By hip disease we generally mean tuberculosis at the hip joint. In times past, however, many conditions other than tuberculosis have been included in this term, and it is more than likely that other conditions will from time to time be recognized and separated from tuberculous disease at the hip joint. But for the present we must still continue the use of the term for those chronic cases that we can not differentiate from tuberculosis. Let us then say that by hip disease we mean a chronic inflammation of the hip joint that we can not differentiate from tuberculosis.

The symptoms begin with a disability, generally due to involuntary muscular spasm restricting the movements at the joint to some extent in all directions, together with some sensitiveness and possibly pain. But there may be no pain, and little or no sensitiveness, and so little restriction of the normal range of motion that it may escape observation for a long time. When there is restriction of motion it is usually more marked in hyperextension and rotation than in the other movements; and pain is usually indicated just above the knee and to the inner side in front.

Radiograms are often of great value. A patient not having sufficient clinical symptoms to warrant a diagnosis of hip disease may show extensive destruction of the joint in a radiogram. Conversely a patient may have marked clinical symptoms of hip disease while the radiogram shows no positive changes at the joint. As in other joints it is usually those cases that begin as a tubercular synovitis that present few clinical symptoms of disease, but marked radiographic changes, with enlargement of the acetabulum and diminution in the size of the femoral head and neck.

I will not undertake at this time a complete differential diagnosis. I will mention only those conditions that most frequently lead to error; of these coxa vara probably stands first.

Coxa vara usually begins at about the period of adolescence, well within the age when we may expect hip disease to appear. But in coxa vara the child walks with the limb rotated outwards and usually somewhat adducted. There is no restriction to motion in hyperextension and outward rotation. A good radiogram settles the diagnosis.

The differentiation from osteoarthritis at the beginning of that disease is exceedingly difficult and often impossible until the radiogram shows the characteristic deposits of osteoarthritis about the joints. But osteoarthritis is fortunately not common in children, and when present it usually involves many joints. Whereas tuberculosis rarely involves many joints except in children of syphilitic heredity.

The hysterical hip, like other hysterical manifestations is often very difficult to diagnosticate. It presents a varying degree of rigidity on different days, and sometimes on the same day. There is no muscular atrophy, which is very constantly present in true hip disease, and the radiogram shows a normal joint.

The results of acute epiphysitis in infancy when no history is obtained have been mistaken for hip disease. But in these cases there is no pain and no rigidity to motion in all directions. A radiogram settles the diagnosis.

The tabetic hip is found only in adult life. It is neither sensitive nor painful, and is easily recognized in a radiogram. The range of motion is excessive rather than lessened.

Tuberculosis and other infections of the sacroiliac joint, the pelvic bones, the lumbar spine and even inflammatory conditions in the lower quadrant of the abdomen often lead men astray. But a free range of motion at the hip joint when gently manipulated and a normal radiogram of the joint will exclude disease of the hip.

Congenital dislocations and other congenital defects perhaps ought to be mentioned, but these do not give restriction to motion in all directions and a radiogram clears up all doubts.

Acute coccus and other acute infections of the joint will be readily excluded because of their acute character.

Cases of hip disease may be expected to run from one to five or more years when treated, and very much longer when not treated. Without treatment shortening, limited motion and deformity may always be expected. And with treatment any or all of these may be the best we can hope for as the result in many cases. However, under early, efficient, patient and prolonged treatment in not a few cases of hip disease the patient recovers without deformity, without shortening, and with a normal range of motion, Lorenz and many other impatient ones to the contrary notwithstanding. I wish to go most positively on record as saying that any treatment of hip disease in the early stages, either mechanical or operative that aims to cure a tuberculous hip and quickly obtain anchylosis is vicious. A patient had better have no treatment at all than treatment to obtain a cure by early anchylosis and subsequent operation to correct deformity as advocated by Lorenz and his followers.

Treatment. "To everything there is a season," saith the Preacher, the son of David, King of Jerusalem, "and a time to every purpose under heaven:"

"A time to be born, and a time to die;
A time to plant, and a time to pluck up that
    which has been planted;
A time to break down, and a time to build up;
A time to weep, and a time to laugh;
A time to mourn and a time to dance;
A time to get and a time to lose;
A time to keep, and a time to cast away;
A time to rend, and a time to sew;
A time to keep silence, and a time to speak."

So in the treatment of hip disease: There is a time to remain in bed, and a time to be up and around; a time to remove the weight of the patient from the diseased hip, and a time to let him walk on the limb; a time to immobilize the joint, and a time to permit a certain range of motion; a time to make traction on the limb, and a time when traction does harm.

By far the more important principle of treatment is that of immobilization. Perfect immobilization is of course impossible; but as complete immobilization as is possible should be made for so long as the muscles controlling motion at the joint are sensitively active in restricting joint motion. When involuntary muscular protection of the joint has subsided it is permissible in many cases to allow a certain range of motion.

The means commonly used to immobilize the hip joint are: Rest in bed, anchoring the limb by weight-and-pulley traction, the Thomas hip splint, the plaster-of-Paris spica splint, and the leather spica splint, the long traction hip splint of the original C. F. Taylor type, and the Bradford abduction splint.

Weight-and-pulley traction in bed is often made more or less inefficient by permitting the patient to sit up in bed. The main objection to this plan of treatment is that it can not be used except for a small part of the period of disease —while the patient can be kept in bed.

The Thomas hip splint is cheap and efficient; but, although apparently very simple, very few men have ever mastered its proper application and use. When it is used, patients must be kept in bed for so long as there is pain, or any tendency to abduction or adduction deformity.

The plaster-of-Paris spica splint is of two types, the long spica reaching from the nipples to the ankle, and the short (Lorenz) spica reaching from the navel to the knee. In the hands of the vast majority of surgeons the long spica is the best and most efficient means for immobilizing the hip joint. It absolutely prevents the development of deformity. But the short spica of Lorenz does not prevent the development of flexion and adduction deformity, and in my opinion should be used only in convalescent cases. The same holds true of the leather spica splint.

In using a plaster-of-Paris spica, the patient should be kept in bed until all pain and excessive sensitiveness have ceased. Then he may be allowed up, and use crutches and a patten on the shoe of the well side. When the convalescence has well advanced, or when the radiogram shows that the joint destruction is so excessive that no useful range of motion can be hoped for on recovery, the crutches and elevated shoe can be laid aside and the patient allowed to carry weight on the diseased joint. Such use of the joint in the late stages hastens the cure, just as in the early stages it hurries on the destructive process and the development of abscesses.

The long traction hip splint is a useful device, but it has been much overrated in this country. Used with the patient in bed, and particularly combined with a chest piece (Ridlon splint) it is a most efficient means of traction (against muscular spasm) and means of immobilization. Used as a walking appliance for children it is more dependable for protection to the joint than axiliary crutches, which may be, and often are, laid aside. But the belief that it gives efficient and continuous traction when used as an ambulatory device is a delusion. The main objection to the use of the long traction splint is that it can not be depended on to prevent the development of adduction deformity, and because in a certain number of cases its prolonged use results in relaxation at the knee joint with knock knee and hyperextension deformity, with a relaxation of the ligaments from which they never recover.

As for the Bradford abduction brace, it probably can be depended on to prevent adduction deformity; otherwise it has much the same faults as the long traction brace.

Most general practitioners and most general surgeons must, of necessity treat some cases of hip disease; these should be content with using a plaster splint. Without training in the use of braces and without a brace maker at hand no satisfactory work can be done. But the treatment of all cases by any one method is not by any means the ideal treatment and can not be expected to give the best possible results.

For the best results one must have had sufficient experience to know when to modify and when to change the plan of treatment, and when to discontinue the treatment. It is much more difficult to make a correct diagnosis of a cure than to make a diagnosis of disease at the hip joint.

For so long as there is an abscess, or a discharging sinus; for so long as there is sensitiveness and pain, and a tendency to the development of deformity, the hip is not well. When these symptoms have long since passed, and when a comparison of radiograms taken at different periods shows an advancing density of the diseased bone and the development of new bone, one is justified in believing that the end of the treatment is near at hand. But the only real test of a cure is the use of the limb without a return of the symptoms.

One word more, as to operations: The theories of all operations on tuberculous hips have been conceived in ignorance and born in iniquity.

The operations that have mostly been done are: Cutting off the head and some of the neck of the femur; cutting off the head of the femur and scraping out the acetabulum, or in a few instances an abortive attempt at excision of the acetabulum. These operations were first done on late suppurative cases (Sayre); then they were done on early non-suppurative cases (Wright). Some cases healed; many did not. Many of the healed cases relapsed later on. Practically all successful cases had to have mechanical treatment for a longer period than similar cases not operated on. The theory was that the disease could be cut out and thrown away. Even now many men fail to realize that a tuberculous hip is just one of the evidences that the patient is sick of tuberculosis, and that to cure the hip and have it stay cured it is necessary to cure the patient of his disease —tuberculosis. This means months and years of treatment. When the patient gets well, and only when the patient gets well, will the hip get well and *stay* well.

When the *x*-ray occasionally demonstrated a circumscribed focus of tuberculous infection it seemed to some a proper surgical procedure to remove it; but the patients operated on did not recover any more rapidly because of the operation, and the operation added not a little to the risk of a general infection and immediate death therefrom.

The same ignorance has governed the management of tuberculous abscesses.

First off, tuberculous abscesses were lanced and left to discharge; many of them became infected. Then they were opened and washed out, or wiped out, or filled with some poison. Many were drained with rubber tubes and other kinds of sewers, and all were made worse and many children died. The timid in surgery aspirated once, or many times, and some injected poisons into the abscess sac. All were ignorant, woefully ignorant that God made the tubercular abscess for a reservoir of healing balm for the patient sick with tuberculosis; ignorant that the abscess was the very thing he needed to cure his disease. Woe unto those presumptuous ones who think that in their laboratories they can make a vaccine, even an autogenous vaccine, that can compare with that developed by God's grace in a tuberculous abscess.

So I say to you: Leave tuberculous abscesses alone.

DISCUSSION.

Dr. H. Augustus Wilson, Philadelphia: The condensed, accurate, and forceful presentation of the subject of hip disease is characteristic of Dr. Ridlon in its thoroughness and soundness. It emphasizes the importance of accurate study in diagnosis. It very properly discourages any routine method of treatment and gives the result of his vast experience in selecting appropriate measures adapted to the individual requirements of each patient.

It has been the experience of everyone that, in the efforts to secure the best ultimate repair and subsequent function, the general health of the patient has very often failed to receive adequate consideration. The emaciation following long confinement in bed, as well as the atrophy of the effected extremity from disuse, has induced recourse to measures to maintain the healthfulness of the patient. I have learned to believe that it would be far better for the patient if we could learn to look upon any tuberculous abscess as being necrotic and entirely different from inflammation.

The insidious onset, the slow process of destruction as well as of repair, the character of the so-called tuberculous abscess and the within contained pus, are all in marked contrast to the rapidity of action in inflammatory processes. Upon the above stated hypothesis it will at once become apparent that the many procedures that are applicable to inflammatory processes are misapplied in tuberculous process. As emphasized by Dr. Ridlon, free incision application to acute inflammatory abscess should very properly be condemned in tuberculous abscess. Excision appropriately employed in acute inflammatory necrosis has no place in tuberculous processes, and the same observations have equal force in long confinement in bed, unnecessarily prolonged freedom from weight bearing on the affected parts.

The necrotic action in tuberculous bone disease urgently demands increasing the powers of resistance, increasing the healthful process of repair. In recent years much time has been devoted to advocating heliotherapy, out-door life and similar measures, with such activity as the individual requirements of the patient will permit. A factor that I have found most essential is to provide mental as well as physical occupation of a type suited to the patient.

Forced feeding quickly produces a revulsion but forced appetite induces a digestion of quality and quantity with normal assimilation. I know of nothing that has occurred in recent years that is more convincing of the soundness of the above hypothesis than the accumulated results following Albee's autogenous bone transplantation as applied to spinal tuberculosis. The same principle, if applied to hip disease, induces a belief that weight bearing is not injurious under proper conditions and that restrained activity is most beneficial. I can heartily agree with the astute quotation of Dr. Ridlon that "to everything there is a season, and a time to every purpose under heaven." In tuberculous hip disease careful and prolonged analysis is required in order to wisely select the right time, the right method for the right patient. I have always envied Dr. Ridlon's ability satisfactorily to employ the Thomas hip splint, but I have seen it employed by others in so many different ways, and apparently so improperly, that I have learned to have a profound respect for the man who knows how to use it, when to use it and when to lay it aside. My preference is for plaster-of-Paris because it can not be removed or altered by the parents and yet can be replaced when, in my judgment, the conditions demand a change. The very large personal factor that must be considered in discussing methods must guide one in charge of patients with tuberculous hip disease in the selection of methods in which he has faith and which he is capable of handling in a satisfactory manner.

Dr. Richard J. Behan, Pittsburgh: The application of a plaster cast is one of the best methods of treating hip-joint disease. It permits the patient to be out of doors and to indulge in some of the pleasures of life and at the same time it allows of the auto-extension of the limb by the weight of the limb itself. The plaster splint referred to is that of Lorenz. This is so applied that the foot hangs free, being raised from the ground by an iron support, the toes being hindered from dropping by the application of an elastic band, running from the anterior part of the lower part of the cast (cast being the long spica of Lorenz) to the toes. The results of treatment are most excellent, the post deformity following the ankylosis being corrected by an osteotomy below the greater trochanter. Of course as a rule, a shortening ensues but it is better to have shortening and quickly cured patients than to prolong the treatment, continue the pain, without perhaps a shortening or deformity.

Dr. John J. Rectenwald, Pittsburgh: A very simple method of applying extension to knee and hip where the patient is going about during the day, and where extension over night will do good is by taking a strip of leather four or six inches long, one quarter inch thick and as wide as a shoe, with a hole in the center. Pass a rope through hole and knot it, nail the leather to sole and heel of shoe, pass the rope through a pulley and apply weight. At night simply lace on shoe and leave weight on over night. In morning remove the weighted shoe, and your patient has had the benefit of a whole night's extension, while he has been asleep. This method has given great relief in a number of cases of painful knee.

DEPENDENT INTERCOSTAL DRAINAGE IN ACUTE EMPYEMA

BY T. TURNER THOMAS, M.D.,
Philadelphia.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Empyemata were drained by an opening in the chest wall in the days of Celsus, and we have not made much progress in treatment since. We are more alive to their importance and, in the main, are diagnosing them earlier, although there is much need of progress in this direction. Eighteen years ago, while an intern at the University Hospital, I saw a case which had remained unrecognized and unopened for about four months. Bacteriology has thrown much light on the character of the infections. Our greatest gain has come in recent years from a better appreciation of the part played by the atmospheric pressure admitted through the drainage opening into the pleural cavity where air had not entered before. We have learned much of the living pathology of other abscess conditions, as those associated with appendicitis, by exposure of the involved parts in operations, but very little has been learned in this way of empyemata because we make only a small drainage opening through which we can see and feel practically nothing. For this reason I value highly the opportunity of studying a formalin hardened specimen (See Fig. 1) which I believe is typical of the usual large acute empyema. It is now under my care in the department of applied anatomy of the University of Pennsylvania, and was obtained by accident under circumstances which are not likely to be repeated frequently. I had never seen nor read of such a specimen before it was discovered about ten years ago, and I have not seen nor read of another like it since. Most empyemata are recognized and opened before death, and of those which are not so recognized and opened, few come to autopsy. The very exposure at autopsy, which is necessary for its recognition, destroys all hope of effectively formalizing it, and after exposing it the next step is usually to take the lung out which at once destroys it as a specimen of empyema. For these reasons this specimen offers a new and very valuable view

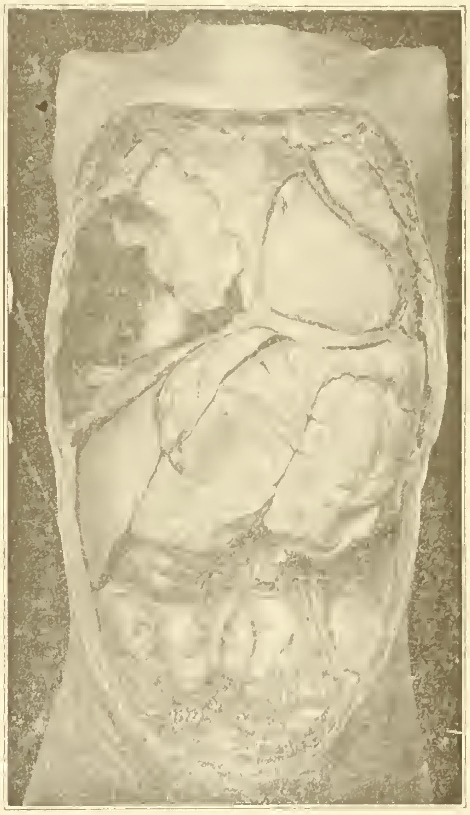

Figure 1. Cadaver specimen of empyema hardened by formalin injection, anterior wall of thorax and abdomen having been removed. Note slight effect of pus pressure on chest wall and marked effect on surrouding soft tissues. Left lung pushed upward and to left, exposing heart more than in normal body. Diaphragm and liver much depressed on side of empyema. Note width of space between diaphragm and chest wall and ease with which drainage opening could be placed at bottom of empyema. On opposite side diaphragm seen as thin layer and pushed close to chest wall by the large intestine up to its highest level. Adhesion of lung to chest wall seen above empyema. Pus debris in back part of cavity.

point for the study of what is least known about empyema.

I have already presented a study[1] of empyema based upon this rare specimen and nine cases operated on. In this paper I wish to restate the essential points of that study in brief form and to emphasize again the importance of and the ease with which perfectly dependent drainage can be provided, substituting, however, for the drainage opening obtained by rib resection that from the simple intercostal incision. Rib resection is as easily provided at the eleventh as at the seventh or eighth rib, but the intercostal opening is still more easy, and, in my opinion, provides more effective drainage than rib resection, in aiding lung expansion.

We still speak of general or unencysted empyemata, meaning that in them the pus is free to flow into all parts of the pleural cavity, and that when the air is admitted through the drainage opening it finds its way into all parts of the pleural cavity and can thus compress and collapse the whole lung. The clinical evidence is overwhelmingly against this conception. I am excluding the tuberculous variety because it frequently communicates with a bronchus and thus receives air independently of a drainage opening. Such a bronchial communication with the large parietal acute empyema is very rare, but is frequent in the small acute variety for a good reason, which will be explained later. It was not present in the anatomical specimen. The most important point in connection with it is that the empyema is firmly circumscribed above by adhesions between the lung and chest wall in its whole circumference. A little reflection will show that this is what should occur in every case, not communicating with a bronchus.

Normally, the only pressure acting on the lung is that of the air coming through the trachea, which keeps the lung fully expanded to the chest wall and diaphragm in all parts. When an empyema develops the accumulating pus falls to the bottom of the pleural cavity and to make room for itself pushes the lung upward and inward away from the rigid chest wall and pushes the diaphragm downward. But above the pus the lung remains in contact with the chest wall and the two approximated serous surfaces adjacent to the pus participate in the inflammation and adhere together. The increasing pus collection can then make room for itself only by crowding the lung away and breaking down the immediately adjacent adhesions between the opposed serous surfaces. The probability is that the adhesions develop between the surfaces of lung and chest wall, normally in contact, so that these adhesions will not later interfere with the expansion of the lung as is usually thought. The interference will come from the atmospheric pressure exerted through the drainage opening and the resistance of the thickened pleura and infiltrated lung tissue presenting on the empyemic cavity.

The small empyemata situated at various levels in the thorax are no more circumscribed than the large empyemata and are small, probably, because they develop in the fissures where the pus can diffuse itself with difficulty and becomes circumscribed quickly. Once circumscribed by firm adhesions the empyema can make room for itself only by forcing the nonadherent walls of the fissure apart and by destroying the pleura and lung tissue adjacent to it. This explains the frequency with which these small empyemata break into a bronchus and evacuate the pus by the mouth. Such an empyema may develop in the deeper part of the fissure and, therefore, be covered by functionating lung, or it may develop in the peripheral portion of the fissure, come into direct contact with the chest wall and give absolute dullness on percussion and absence of air sounds on auscultation over it.

The circumscription of the small interlobar empyema is well recognized. Its occurrence, in the more common, large, parietal variety, provides a satisfactory explanation for clinical findings that have not been understood. For example, if the pus were not confined by adhesions and were free to flow about as the effusion in ascites, its upper level of dullness would be in a straight line. But percussion shows that it is irregular or curved, which is probably due to the conditions under which the adhesions developed. The dullness is not movable like that of an ascites, and such slight change as occurs on change of the patient's position is probably due to the changing pressure of the pus against the soft lung with the change in position of the body.

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[1] *Am. Jour. Med. Sci.*, March and April, 1913, Nos. [illegible] and 4, Vol. CXLV., pp. 405 and 555.

The reported experience with double empyemata is very interesting in this connection. In the early cases reported, because of the fear of a total collapse of the lung on the admission of air through the drainage opening, a considerable interval was allowed to elapse between the opening of the two sides. A complete collapse of both lungs would cause rapid death of the patient. This will result in a normal dog if both pleuræ are opened at the same time. But we now know that a patient with a large empyema on both sides can have both empyemata opened at the same time and live. Hellin observed in his case that the cyanosis, present during the operation, disappeared after both empyemata had been opened, and the patient breathed better. We have not known the explanation for these interesting facts, but if we assume the presence of such adhesions as are present in this anatomical specimen, the explanation is simple enough. In the normal dog there are no adhesions and the air admitted through openings on both sides completely surrounds both lungs and causes total collapse of both with rapid death. When an empyema is opened the pus escapes and its place is taken immediately by air which has a pressure of fifteen pounds to the square inch. But the pus was completely circumscribed by adhesions and the air which takes its place can not pass beyond that circumscribed pus cavity. Before the drainage opening was made, the adhesions buttressed the lung against the pressure of the pus and permitted a portion of it to functionate. This explains why a patient can live with a large empyema on each side.

After the opening is made the atmospheric pressure of fifteen pounds to the square inch is substituted for the previous pus pressure, but it can exert itself on only the surface of lung presenting on the empyemic cavity and is resisted, like the pus pressure, by the adhesions between the lung and chest wall. It is this air pressure which later delays the expansion of the lung to fill the space previously occupied by the pus, and has received much attention in recent years, being responsible for the many devices for suction drainage and the aspiration treatment with or without the injection of antiseptic and other substances into the empyemic cavity. We have heard only of the disadvantages of this external atmospheric pressure. In my opinion, it serves very useful purposes but can become very troublesome if we do not know how to control it. We are all familiar with the often expressed fear of a dangerous change of pressure on the heart when the pus is rapidly evacuated by the usual operation. I have seen or performed a large number of these operations, but I never saw any danger that could be attributed to this cause, and I believe that there is little ground for the fear. We are all familiar with what happens when the drainage opening is made. Each outflow of pus on expiration is immediately followed by an inrush of air on inspiration which sounds ominous but is not. It merely indicates the eagerness of the air to fill the space left vacant by the pus which just escaped, and one succeeds the other until when all the pus is out its place has been taken by air with its pressure of fifteen pounds to the square inch, which will not allow a marked change in the position of the heart. If I could provide for the immediate and permanent expansion of the lung after the drainage opening is made, I would not do it. This would closely approximate the infected walls of the abscess and lead to irregular adhesion formation and numerous pockets of pus which could not be drained. The atmospheric pressure maintains a single cavity which is easily drained. The walls of the empyema must have time enough to cleanse themselves by the natural processes, which is always a matter of weeks and varies with the character of the infection, but we should guard against a too slow expansion of the lung or a permanent nonexpansion, and I believe we can.

The golden rule in the treatment of abscesses is to afford free drainage, which is best provided by a dependent opening. The one special consideration in the treatment of empyema is the reëxpansion of the collapsed portion of the lung. The size and situation of the drainage opening have an important bearing upon this expansion. If the air passes as freely through the drainage opening as through the trachea, the internal pressure can not overcome the external pressure which is reinforced by the normal retractility of the lung and the resistance of a more or less thickened pleura and infiltrated lung tissue bordering on the empyema. It is obvious that the external pressure of the air in the empyemic cavity must, in some way, become diminished or the lung never will expand. A large opening is not necessary for free drainage. The air must pass through it less freely than through the trachea, and the usual opening which is small is occluded by the thickness of the drainage tube and the escaping pus as well as by the pus soaked dressing. The air in the cavity is absorbed faster than it is entering through the drainage opening and in proportion to this difference the external pressure is being reduced. What we need is an opening which will provide free drainage and admit the least air. A perfectly dependent opening may be very small and still afford abundantly free drainage, because it is constantly effective. If the ordinary aspirating needle will evacuate the accumulation of weeks in fifteen minutes or a half hour, as we know it will do, then an opening large enough to admit the usual rubber drainage tube at the very bottom of the cavity should evacuate the pus as fast as it forms, since it will be constantly effective in any position the patient is likely to occupy.

I have employed the usual small opening made by excision of portion of a rib at the bottom of the cavity, in nine cases, and the intercostal opening in the same position in ten cases. I had absolutely no interference with drainage in any, and prefer the latter, because it is the smaller. For that reason it best provides against the entrance of air into the empyemic cavity and for the reëxpansion of the collapsed portion of the lung. The best guide as to the entrance of air is the sound made during inspiration, with which we are all familiar. Since I have been using the intercostal opening, this sound has almost been done away with, and is heard only for a short time after the operation and when the patient is crying or coughing. In many of the cases, even this soon stops. To my mind, it means that this opening provides almost all the advantages of suction drainage as usually employed, because usually the suction apparatus leaks air into the cavity and, moreover, interferes with drainage. Very recently DeBovis[2] employed the dependent opening in three, with complete recovery in from three to five weeks. He resected a portion of the rib but left the wound open without tube or gauze drainage. He usually enters through the ninth intercostal space but makes a second opening lower, if he finds that the cavity extends lower. According to my experience it nearly always extends to the eleventh intercostal space or twelfth rib.

The relative value of any method of treatment must be determined by its results when compared with other methods. Such a comparison, however, is not easy to make because the reported results from the various methods are very vague. The most satisfactory comparison is of the time necessary for the cessation of the discharge. The cure is practically complete when the lung is in contact with and adherent to the chest wall in all parts of the empyema, but it will take a variable time after this before the sinus in the chest wall closes. Opinion varies as to when the tube should be removed and that of course affects the time of closure of the sinus. In my cases closure occurred in from four to twelve or thirteen weeks, usually in six or seven. After a fairly thorough search of the literature, I feel safe in saying that a cure is very rarely obtained in less than four weeks and practically never in less than three. According to Schadler, quoted by Hellin, the average duration of a unilateral empyema was fourteen weeks, although in children it was nine weeks. But not infrequently many months are necessary and sometimes years. A few years ago I saw a case, about three years after operation, with an opening about an inch wide and no discharge at all, showing that the previously infected surfaces had healed over and that the cavity was permanent. I believe at present that an ordinary empyema with no communication with a bronchus, and a small intercostal drainage opening at the bottom of the cavity, can not remain permanently open. According to my experience, in a short time there will be no air entering the empyema, through the drainage opening. Any air that was in the cavity will be absorbed, so that the lung will be exposed only to the pressure of the air coming through the trachea which is equal to fifteen pounds to the square inch. From time to time this pressure will be increased by crying and coughing. This same pressure is being exerted on the external surface of the chest wall, which in children is softer than in adults, and this pressure tends to drive the wall inward to meet the expanding lung to which it finally adheres. The retraction of the wall thus produced seems to be regarded as something unfavorable. I believe that it is an aid to the obliteration of the empyemic cavity and that when this has been accomplished and the sinus is closed the muscles attached to the chest wall, with the increasing activity of the patient, gradually pull the wall back into its normal shape and with it the lung into full expansion.

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[2] *Semaine Médicale*, July 29, 1914, p. 349.

We should not expect all empyemata to close in the same time. The size of the cavity, the time during which the empyema has been developing, the thickness of the involved pleura, the character of the infiltration of the compressed and closed portion of the lung and the character of the infection must vary the time necessary for full expansion of the lung and obliteration of the cavity. We should take into consideration, also, the fact that we can not know the actual conditions within the cavity, since we can not look into it or feel its walls. Until I know more about these factors, I expect to be satisfied that from four to ten or twelve weeks should be allowed for a cure. A slight discharge from a closing sinus may be disregarded as it gives little or no inconvenience and will soon cease.

More important than the exact time of closure of the sinus, is the effect of the drainage on the general condition and mortality. In only one of my nineteen patients did the general condition fail to improve remarkably in the first week and that one ultimately got well. There was severe infection and much fibrinous material in the discharge. I have had one death in a child who also had whooping cough. As it was in the contagious wards of the Philadelphia Hospital and the intern assured me almost daily that the patient was doing very well, I left the case in his hands. I expected to see the child as soon as any change for the worse was reported but received no unfavorable report until I was told one day that the child had died suddenly that morning. No autopsy could be obtained. In 1335 cases of unilateral empyema collected by Hellin, there were 299 deaths, a mortality of 22.4 per cent. While my experience is a small one, from it I am confident that dependent drainage will have a very important effect in reducing the mortality. It certainly will be followed by an earlier disappearance of the septic symptoms than will drainage at a higher level.

Case 1. Boy six years old, was attended by Dr. William Schleif. December 26, 1912, he had a spasm, much cough and was delirious. Temperature rose to 105° F. and pneumonia was diagnosed. On fifth day he had severe pain in abdomen especially in right lower quadrant where there was tenderness. Recovered partially for a time and then grew gradually worse again, a mild unproductive cough persisting. Empyema was diagnosed and the aspirating needle showed pus. Admitted to University Hospital January 14, 1913, on service of Professor Edward Martin. Duliness over whole right side of chest except near apex. Leukocytes 26,000. Urine showed trace of albumin and a few hyaline and granular casts. Operation was performed on day of admission, under ether, with patient in prone position. Narrow bistoury was passed through eighth intercostal space in postaxillary line to make pathway for long grooved director curved at the tip. This entered a large cavity and sought its bottom where it could be felt by the fingers of the other hand outside over the eleventh interspace a few inches from the spine. A vertical incision about two inches long was made here to the tip of the director which was then pushed out through the interspace. A curved hemostatic forceps was then introduced upward and inward along the director and away from the diaphragm. The director was then removed and the forceps drawn out opened to increase the opening. After evacuation of the pus, a rubber drainage tube was passed inward about two inches and guarded with a safety pin. Dressing was applied and patient returned to the ward. Seven hours later the temperature was normal and remained so until five days later when it became elevated and the eruption of chicken pox appeared. This necessitated his being sent home into the open country where he was attended by a nurse who had no difficulty in looking after the empyema. All that was necessary was to change the dressings, when the patient would be placed in the prone position to prevent the escape of the tube while the dressings were being removed. The surrounding skin surfaces were then gently wiped off with a piece of cotton, moist with bichlorid solution, and a new dressing was applied. No complications or trouble arose in connection with the empyema or chicken pox. The dependent drainage controlled the empyema to the end. The tube was pushed out by the lung, March 2; it was not replaced, and a week later the serous discharge had ceased. The patient recovered perfect health.

Case 2. Man, thirty-eight years old, with a good physique, was admitted to medical wards of Philadelphia Hospital on Dr. A. A. Eshner's service, May 4, 1914. History was negative as to tuberculosis. Right arm was amputated just below the shoulder thirteen years ago. Diagnosis was made of croupous pneumonia, complicated by pericarditis with effusion. This gradually disappeared. The temperature had been about normal when, on May 22, it was noted that it was gradually rising and that there was an increasing dullness at the right base. The hollow needle withdrew seropus which showed a preponderance of pneumococci and streptococci. Patient was transferred to the surgical ward on Dr. A. C. Wood's service. Operation was performed May 24. Intercostal drainage in eleventh space posteriorly was obtained in same way as in Case 1. Some pus forced into subcutaneous tissue, through first opening during operation and later drained through lower opening. The patient did very well afterwards and no complications arose. June 9, the tube came out and was not reintroduced for two days when an accumulation of pus escaped. At no time was air heard passing through the opening except on coughing and even this ceased a few days after operation. Tube was permanently removed June 18, and on June 21 the discharge was very slight. The sinus was closed July 2.

Case 3. Boy, three years old, was admitted to Philadelphia Hospital, May 24, 1913. He had been attended by Drs. L. M. Allen and H. D. Jump, who referred the case to me. The patient developed measles about one month before admission, a bronchopneumonia succeeding the measles and ending in an empyema on the right side. Operation on day of admission, intercostal drainage being provided in the eleventh interspace as in the previous cases. It was observed that before the operation, the skin was dark red in color. After the operation when the patient had been returned to the ward the skin was almost normal in color and the breathing much improved. The patient did very well after the operation. He continued to improve and the discharge had diminished a good deal when the parents took the child home on June 6. Dr. Allen took charge of the case at home and had no trouble with the drainage. The patient returned to the Philadelphia Hospital June 14, to have the tube removed because it had slipped in too far to be grasped by the fingers. It was easily caught with forceps. June 26, the sinus had closed. The child has done well since and is in perfect health now.

Case 4. Boy, two years old, was admitted to contagious wards of the Philadelphia Hospital with whooping cough January 18, 1914. Previous history was not obtainable. He had characteristic paroxysmal cough with whoop. February 11, it was noted that many râles were heard over entire right lung; impairment of resonance over right apex posteriorly and dullness over rest of lung; breath sounds distant. February 15, needle was introduced on right side and a greenish seropurulent fluid withdrawn. Operation was performed February 16, in contagious ward to provide intercostal tube drainage in eleventh space. I did not return to the contagious ward to see the patient, but received daily a very favorable report from the intern in charge and intended to respond upon an unfavorable report. I received the usual favorable report on February 25, and was surprised on the following day to be told that the child had died suddenly that morning. Permission for an autopsy could not be obtained. The empyema had been developing, probably, only a week at the time of operation when the pus was largely serous and the quantity not large. It would seem hardly likely that the empyema caused the death in this case.

Case 5. Boy, four years old, was admitted to Philadelphia Hospital on the service of Dr. A. C. Wood, March 14, 1914. Mother is a Polish woman and understands little English. About nine weeks before admission patient became feverish and began to cough. Mother said he had always been anemic. At the end of five weeks the cough and fever seemed to subside, but he continued to be short of breath. At time of admission had pain on right side of chest, fever and rapid pulse; coughed and preferred to lie on right side. Dullness extended over almost entire right side and no expansion was observed on that side. Apex beat was in left midaxillary line. Exploratory puncture showed pus. Operation March 17, 1914: Rubber tube drainage in eleventh interspace. The method of dressing as usual consisted in placing the patient in the prone position and removing the pus-soaked gauze carefully, because in the sitting position the tube tends to come out easily. The surrounding skin was cleansed with a piece of gauze or cotton soaked in bichlorid solution or alcohol and a clean dressing applied. April 10, drainage tube was shortened and, May 2, it was removed entirely, when the discharge was very slight. Patient was sent home May 27, the sinus having been closed about a week. The general health and strength improved very much in the hospital and he has since been much healthier than before the operation.

Case 6. Woman, thirty years old, has never been robust although she rarely complains of ill health. Dr. C. H. Fritz was called, March 23, 1914, when she had cough, temperature of 102° F., pulse 100 and respiration 24. March 25, patient was much improved with temperature, pulse and respiration normal. March 29, had another attack like the first with severe pain on the left side, especially in the axillary and submaxillary regions. Gradually became apathetic and semidelirious and Dr. N. B. Gwyn was called in consultation, April 11, and diagnosed an empyema. About two quarts of pus were withdrawn by aspiration on the following day. Bacteriological examination showed streptococci. Operation, April 13, was done at the patient's home. Drainage tube was placed in eleventh interspace. I left the after care of the case in Dr. Fritz's hands, intending to return when called by him. The improvement was so satisfactory and the course so uneventful that I was not asked to see the patient until May 24, when I removed the tube which had not been out since the operation. The discharge had entirely ceased by June 26. At the time of operation the patient was pregnant but said nothing about it. She aborted after the sinus had closed, lost considerable weight and developed a cough with purulent expectoration. To exclude a residual pus collection at the site of operation I introduced the needle of a large syringe about four inches through the scar of the sinus in various directions without obtaining pus. There was no pain or tenderness at the site of the empyema. The patient has since improved very much but still has a slight cough.

Case 7. Boy, seven years old, of Morton, Pa. Dr. A. G. Tinney was called May 25, and diagnosed a croupous pneumonia at the left base. The crisis developed June 2. The patient did not quite recover and five days later an effusion was recognized at the left base. I saw the patient at his home and operated June 9. The grooved director in this case could not be felt by the fingers outside lower than the tenth interspace and the drainage opening was made there. The empyemic cavity was small as its boundaries could be reached by the finger through the wound in almost every direction where the lung was firmly adherent to the chest wall and diaphragm. The pus was yellow and thin and contained no flakes. I did not see the patient again, Dr. Tinney taking charge of the after treatment. July 25, he reported that the tube had been removed and a week later that the sinus had closed. Dr. Tinney reports that the sinus broke open and closed, twice since the first closure, a small quantity of pus escaping each time but smaller with each opening of the sinus. It is now closed, probably permanently.

The preceding empyemata were, evidently, not tuberculous. My experience with operation for empyema in patients with advanced phthisis has been decidedly unfavorable. The following three cases were probably tuberculous.

Case 8. Woman, fifty-two years old, 152 pounds in weight, had been complaining of heart trouble and chronic bronchitis for several years, but did her own housework until about a year ago. About March 31, 1913, she was seized with severe pain in the left side of the chest, which she called "an awful stitch," and called in her physician, Dr. William Schleif. She continued to grow worse and I was asked to see her April 7, 1913. There was a localized dullness low down on the left side. From the beginning of this acute attack, she had had fever, sweats at night, and numerous herpetic sores about the mouth. Dr. Schleif had had her sputum examined several times for tubercle bacilli without success. Aspiration in the eighth interspace in the midaxillary line showed a thin brownish fluid. A stab wound was made at the site of the puncture and a long probe bent at the tip was introduced here. It entered a considerable cavity but could not be passed to the bottom of the normal pleural cavity. The stab wound was increased and the finger introduced. It could not reach the anterior limit of the cavity but just posteriorly to the opening the lung was firmly adherent to the chest wall as it probably was all around the empyema, which extended two interspaces lower. A second opening was made at this level which was evidently the lowest part of the cavity. A large quantity of the same brownish fluid mixed with large and small fragments of fibrin escaped. A rubber drainage tube was introduced in this lower opening and guarded with a safety pin, and the usual dressing applied, the first opening being allowed to close. The patient began to improve after the operation but the progress was slow and the tube was persistently kept in. It would escape from time to time and when it could no longer be reintroduced a smaller tube was used. The sinus closed later. She gradually increased in strength, and could do light housework. During the past summer she became ill again, but had no trouble with the empyema area, and is now able to be about but can not do any work.

Case 9. Man, fifty-three years, janitor, was admitted to tuberculosis wards of Philadelphia Hospital, on service of Dr. A. C. Morgan, September 5, 1914. Patient says he has been in good health until present illness began about six weeks before with pain in the chest and weakness. He had lost weight and strength, had cough, expectoration, night sweats, and cyanosis, especially of the fingers. There was a slight consolidation at the right apex and flatness of whole of left side except at apex. One examination of sputum was negative for tuberculosis. No history of pneumonia recently, but had an attack twenty-one years ago. He said that he had not been sick since until present illness. Pus drawn from left side was negative for tuberculosis, but showed pneumococci. He was transferred to surgical ward, September 11, 1914. Temperature normal and pulse 100 to 110, but patient looked very ill. Operation September 12: Drainage in eleventh interspace as in preceding cases. (See Fig. 2.) In six days since operation he has improved much in appearance, appetite and strength.

Case 10. Man, twenty-six years, machinist, was admitted to tuberculosis ward of Philadelphia Hospital, in service of Dr. S. Rhoads, March 10, 1914. Repeated examinations of sputum for tuberculosis was negative except on one occasion when it was positive. Patient became ill two weeks before admission with a cold, which began with a chill and cough. Previous to this he had been in good health. At first he was constantly chilly, but at times became hot and perspired profusely. He gradually lost appetite, weight and strength. There was extensive dullness on left side of chest. He has been aspirated on this side about sixteen times, from two to six pints of purulent fluid being removed each time. Repeated examinations of this fluid were negative for tuberculosis, but always showed streptococci with pneumococci occasionally. During the two weeks of his illness preceding admission, he did not have a physician. He was transferred to surgical ward September 13, and operated on September 14. The previous aspirations had been done through the tenth interspace posteriorly, so that the grooved director in the operation was introduced here. It did not find a cavity so that it could not be moved about freely as usual. Vertical incision was then made here, intercostal space penetrated by grooved director and then finger, but no cavity met with. A hollow needle was introduced upward and forward about four inches and purulent fluid obtained. A forceps was then pushed along needle to the pus and withdrawn opened, a considerable quantity of pus being evacuated. Cavity extended to bottom of pleura and a second opening was made through eleventh interspace in bottom of vertical incision. Drainage tube introduced and rest of wound closed by sutures. Dressing and bandage were applied, and in four days since operation patient has done very well and is out of bed.

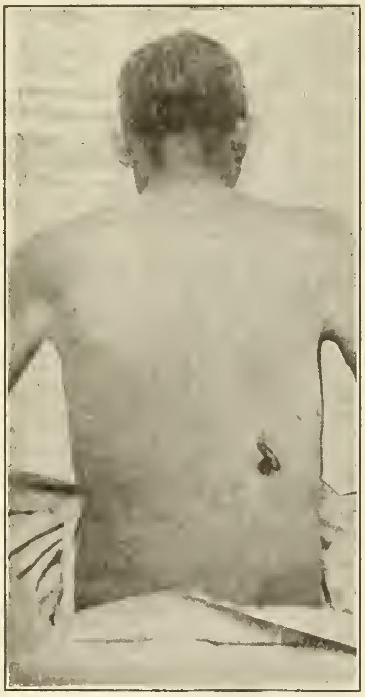

Figure 2. Drainage tube in right, eleventh intercostal space. Tube cut short to prevent pressure on it. Dark spot seen above and to right shows where grooved director was introduced. Another spot to right of this shows where diagnostic aspiration was performed.

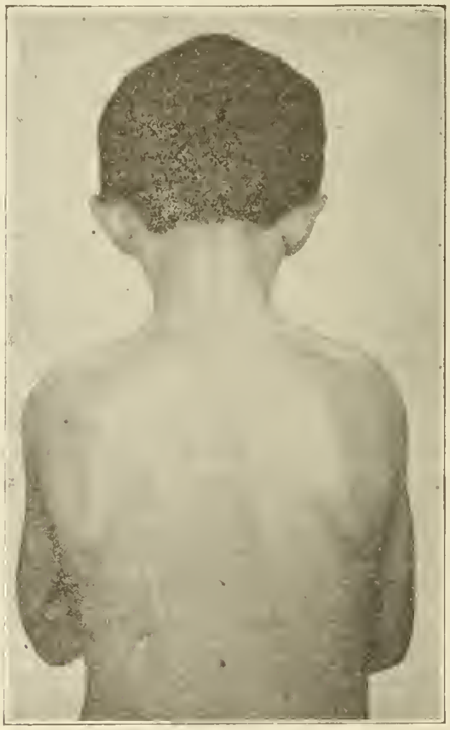

Figure 3. Scar on left side from drainage opening for which a small portion of eleventh rib was excised. This accounts for a slight depression to left of scar.

CONCLUSIONS.

The common, large, acute, empyema is completely circumscribed by adhesions between the lung and surrounding wall and it, usually, extends from the bottom of the normal pleural cavity a variable distance upward. The small empyema is, usually, interlobar but is no more circumscribed than the large variety, which is parietal.

The adhesions explain why the upper line of dullness is not straight, why the dullness moves little or not at all on change of the patient's position, why a patient can live with a large empyema on each side, and why in such a case both sides can be drained at the same time.

The atmospheric pressure admitted through the drainage opening prevents a dangerous, sudden change of pressure on the heart, when the pus is evacuated, and explains why the previously compressed lung does not immediately expand.

The object of treatment should be to provide a drainage opening which gives free drainage and admits as little air as possible. This is accomplished best by the intercostal opening at the bottom of the cavity, large enough to admit the ordinary rubber tube. The constantly escaping pus through and around the tube will prevent the entrance of air except on forced respiration as in crying and coughing.

This is as easily and safely made as the higher opening, and can be done in most homes. The lower opening will more quickly relieve the patient of the septic symptoms, lower the mortality, lead to a quicker convalescence and earlier closure of the cavity and sinus, than the higher opening.

DISCUSSION.

Dr. Henry D. Jump, Philadelphia: My part of this discussion must be that of the attending physician. The majority of physicians, I believe, are convinced that an early diagnosis and early drainage of empyema are necessary. The condition may be relieved spontaneously by the drainage of pus through a bronchus or through an opening in the chest wall; by aspiration or by discharge. The chance that any of these except the last may occur is so remote that they must be ignored. Waiting for such an outcome will endanger the life of the patient or materially interfere with perfect recovery. We must ask of the surgeon, therefore, to do that operation for drainage which is least dangerous to the patient, and which will give the lung the best opportunity of returning to its normal function.

The operation which Dr. Thomas does seems to fulfill the first requirement completely, because of the small amount of surgery done and the short period of anesthesia. Whether the interspace is of sufficient size to permit full drainage in all cases, without doing an excision of the rib, must be decided by the surgeon. Dependent drainage *per se* is desirable. The opening of the chest at the bottom of the cavity has been opposed by some because they believe that the elevation of the diaphragm, after the removal of the weight of the pus, will allow it to close the opening. This evidently has not occurred in Dr. Thomas' cases. Whether the pus is ever sufficiently thick to prevent drainage through the incision in the intercostal tissue is doubtful. In the course of the drainage of these cases, the pus becomes thinner and thick masses, which may be present, will liquify and be discharged. After the safety of the patient, the restoration of function is the most important consideration. Normally the lungs fill their places completely because of the negative pressure within the chest. The atmospheric pressure through a large, free, external opening, will equal that through the bronchus and the lung can not expand. The problem then, has been to limit the amount of this external pressure. This operation seems to me to be well qualified to do this. As has been said by Dr. Thomas, the small opening filled with pus, and further occluded by the pus-soaked dressings, works toward a reduction of this pressure. With the lessening of this external pressure, the lung expands. The earlier closure of the opening and the consequently earlier recovery of the patients, prove the value of this contention. This is a very important fact, for the longer the lung is compressed, the less do its elasticity and resiliency become and the less is the chance for complete expansion. If the lung does not expand completely, the sinus does not close, or the chest falls in to occupy the unfilled space. The average duration of Dr. Thomas' cases was six to seven weeks. This is a marked advantage in the period of convalescence over that reported by Schadler with an average of fourteen and a half weeks and that by Fraley with an average of thirteen weeks.

The photograph shown to-day corroborates the opinion we have had that the pus cavity is limited by adhesions. The irregularity of the upper line of dullness and the slight change noted in this dullness by change in the position of the patient are evidence in favor of the belief that such adhesions exist. Theoretically, also, it seems that these adhesions must be present or there would be a complete collapse of the lung with embarrassment of respiration, when the opening is made. Instead of this there is usually a relief from preexisting dyspnea. The patient which Dr. Thomas operated on for me made a complete recovery. I saw him last week and found the chest normal in outline. An *x*-ray picture shows the lung on the affected side fully expanded. While the number of cases reported is not sufficiently large for us to draw positive and final conclusions as to the value of this method, the results which he has gotten seem to justify the operation.

Dr. Nathaniel Ginsburg, Philadelphia: Empyema or pyothorax is a surgical condition to which is attached much interesting study. Pus in the pleural cavity is analogous to pus in the peritoneal sac, since the collection may be encysted between the layers of the visceral serous surfaces of the pleura, or on the other hand the abdominal abscess may be confined by the fusion of the visceral and parietal endothelial layers. The diagnosis of pyothorax is not as a rule difficult and in very young children careful physical examination of the chest with the presence of the clinical symptoms of the pleural irritation will reveal a localized patch of dullness with diminished breath sounds pointing to the site of the purulent collection. Pyothorax in relation to treatment and terminal results is a far different state in the very young than in adult life. In children localization of the pus should always be proved by preliminary needling with an ordinary long needle and glass syringe, and if pus or purulent fluid is withdrawn, still maintaining the needle in place, resection of a portion of the adjacent rib, sufficient for tube drainage, should be practiced in all these cases regardless of any attempt to find the lowest point at which gravity drainage can be secured. This method of treatment, when the tube is introduced without inducing a pneumothorax, and withdrawn when the secretion becomes serous in nature, in the absence of prolonged and marked toxemia, will be followed by recovery in the majority of cases of empyema in the young.

Not infrequently the collection is interlobar and localization is then increasingly difficult. In this class of patients the rule should be always to aspirate first and then drain at the immediate site where pus is withdrawn. In these cases the abscess is encysted and I believe the introduction of the finger for the purpose of exploration has in many instances broken down the pleural adhesions and caused a dissemination of the infection. The aspiration and rib resection in children who are very ill can and should always be done under local anesthesia.

In adults the collection is usually, as Dr. Thomas has told us, of sufficient size to place it in the lower pleural space by force of gravity and the cardinal rule holds to drain all abscess collections at the lowest point where adequate drainage can be secured. The problem in empyema is not drainage. This is a simple and easy measure, but the final result is the real problem because these patients will drain indefinitely owing to the large suppurating pleural surface both parietal and visceral, which, holding the lung in either partial or total collapse, allows drainage to go on, indefinitely exhausting the patient and finally resulting in death. When we can maintain lung expansion in these cases and obliterate the cavity by our methods of treatment, then the end results in empyema in adults will be better than they now are.

Rib resection and drainage in very young children in a large number of cases in our service at the Mount Sinai Hospital of Philadelphia has had a very large mortality, owing to the serious state in which these children were when subjected to operation. This is also the experience of other operators both in this country and abroad. I have closed the sinus in some of these cases by injections of bismuth paste (Beck 18 per cent., bismuth subnitrate 78 per cent. petrolatum) but in its use care should be exercised not to produce acute or chronic bismuth intoxication. Death as a result of this absorption has followed.

During the past year I have treated three adults with empyema and all were cases in whom rib resection had been performed in other hospitals. The resection was only, as I have stated, a drainage operation and the patients left the institution where resection had been performed with suppurating pleural surfaces draining large quantities of foul-smelling pus, and showed marked emaciation and exhaustion.

In one case a radical Fowler operation, removing the ribs between the second and tenth, revealed a totally collapsed right lung with a great suppurating surface. Decortication of the lung was performed, and later a second decortication done. The patient finally succumbed from exhaustion. In another case resection of the ninth rib from the postaxillary line to the costochondral junction allowed access to a long suppurating tract which was obliterated. In the third case operation was precluded by the exhaustion of the patient due to the prolonged drainage and toxic absorption.

I can not subscribe to Dr. Thomas's views regarding the lack of necessity of performing rib resection, because it seems to me that adequate drainage can only be secured by partial rib resection and tube drainage. This is especially true in adults.

Dr. John J. Rectenwald, Pittsburgh: I wish to mention two cases of empyema in children, for which I recommended operation, but they recovered without surgical interference. In the first child, aged six, pus was demonstrated with hypodermic, chest being one fourth filled. On day operation was to be performed the parents refused to allow it, and the chest cleared up without operation. In second case, child, aged seven, the whole left thoracic cavity was filled with pus, demonstrated by percussion and hypodermic needle. The pulse was very rapid and weak. There was great dyspnea. Operation was recommended but refused. This child finally recovered after a protracted convalescence, under expectant treatment, in the hands of another physician. I just mention these two cases to show that patients with pyothorax, at least children, at times recover without operation, even though one entire side of the thorax be filled with pus.

Dr. Thomas, closing: It seems evident from Dr. Ginsburg's discussion that I have not made myself clear concerning what I mean by dependent drainage. I would not drain in the eleventh interspace for all empyemata. In empyema in a fissure about the region of the scapula, by a preliminary stab wound, I would introduce a curved grooved director, find the bottom of the cavity and place the drainage opening there. This might place it in the fourth interspace. I usually make the opening in the eleventh interspace because in most empyemata the pus comes down that far.

In the *Journal of the American Medical Association*, September 12, 1914, is an abstract of a paper by DeBovis in which he advocates dependent drainage in empyemata and he also says that it does away with the necessity for suction drainage. He did not use tube or gauze to keep the wound open. My chief purpose was not to show the superiority of dependent drainage, but to show that it was not only feasible but safe and easy. I assume that everyone admits its superiority.

With regard to Dr. Rectenwald's patients, who got well without operation, such cases have been reported and they have led to attempts at cure by repeated aspiration without further drainage, as well as the injection of antiseptic and other solutions at the time of the aspiration, but none of these methods have established their claims. Drainage alone has proved to be the most valuable method of treatment. The small dependent opening should provide the most essential conditions for drainage and lung expansion, for ridding the patient of sepsis, early convalescence and closure of the cavity and sinus.

THE LOCAL APPLICATION OF RADIUM IN SURGERY.

BY ISAAC LEVIN, M.D.,
New York.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The therapeutic value of the radioactive substances in medicine, dermatology and surgery is due in each instance to different biological actions on the organism of the actinic rays emitted by these substances. The value of the rays in internal medicine is due to their influence on the metabolic functions and the ferment actions of the organism when introduced in small quantities in the circulation. In surgery as well as in dermatology the therapeutic action of the substances is due to their influence upon abnormal tissues when applied locally in large quantities.

Both the mode of action and the methods of application differ in the two classes of diseases. In the present communication only the application of the substances in surgical diseases will be considered.

The therapeutic action of a local application of radioactive substances is due to the fact that the rays emitted by them penetrate into the underlying tissues and produce there certain changes in the cells. The character and extent of these changes depend upon the amount of radiation. Very weak radiation may stimulate the functions of the cells, a larger dose inhibits the cellular functions and ultimately causes their death. Every cell of the animal or plant organism is susceptible to this inhibitory action of the rays, but the susceptibility varies in degree with the cells of different tissues. Thus the liver cells are more susceptible to the rays than the gall-duct cells and the tubular cells, of the kidney react stronger than the glomeruli. The glandular epithelium of the breast, the spermatozoa forming epithelium of the testicle and the graafian follicles of the ovary are more vulnerable than the other tissues of the same organs. The investigations of Oscar Hertwig and A. v. Wassermann have shown that the rays of radioactive substances act primarily on the nuclei of the cells and inhibit their power of proliferation, before any other function of the cell is impaired. Consequently old and highly differentiated cells, in which the proliferating power is minimal, are more resistant to the action of the rays, while the young embryonic cells, and cells in a state of active proliferation, are very susceptible. Both Hertwig and Wassermann maintain that this inhibition of the power of proliferation may have taken place under the influence of the rays in cells, which morphologically do not show as yet any sign of impairment of their vitality. This fact coincides with the clinical observations of Exner and others that a malignant tumor may occasionally become retarded in its growth and consequently become less malignant under the influence of the rays though it does not diminish in size or disappear.

With further increase of the quantity of rays the injury of the cell becomes more pronounced, there takes place pyknosis of the nucleus, vacuolation and cloudy swelling of the plasma and ultimately complete necrosis of the cell. Since the injurious action of the rays differs vastly for various cells it is possible to select a quantity of the rays which will destroy a certain kind of tissue and leave the other adjacent tissues either intact or so slightly injured that they ultimately completely recover. This *quantitatively selective* action of the rays serves as the biological basis for their use in surgical therapeutics. Since the rays act most readily on young cells in a state of active proliferation and their influence consists primarily in the inhibition of the proliferating capacity of the cells, it is self-evident that the radiation is of the greatest value in the treatment of tumors benign as well as malignant. Indeed with the exception of a certain class of skin diseases the local application of radioactive substances is being used nearly exclusively in the treatment of benign and malignant tumors and allied conditions.

The therapeutic action of the radioactive substances on a new growth consists primarily in the destruction of the tumor cells and also in a peculiar specific action on the blood vessels. The endothelial cells of the intima degenerate and swell, the lumen of the capillaries retracts and as a consequence the tumor cells to not obtain the nourishment needed for the maintenance of their life and for the proliferation.

In view of the great progress in the operative treatment of tumors the necessity must be shown for any additional therapeutic measure. This question will be considered later during the discussion of the value of the radioactive substances for the various clinical conditions.

Another subject which must be mentioned here is the relative therapeutic value of the rays emitted by the radioactive substances and the roentgen rays. The biological action of the two kinds of rays is probably very closely analogous, though some investigators maintain that there is a qualitative difference in their action. The writer and other investigators observed clinical conditions which were influenced by one kind of the rays and in which the other kind failed. The rays of the radioactive substances are a great deal more penetrating than the hardest roentgen rays which can be produced to-day. The former can be placed close to the diseased area, while the distance between the target of a roentgen tube and the skin is not less than fifteen centimeters. On the other hand the roentgen rays can be used over a larger area.

The writer has indicated in a previous publication the relative value of the different methods of radiotherapy. In the present communication only those clinical conditions will be considered which are most favorably influenced by the rays of the radioactive substances.

TECHNIC OF RADIUM THERAPY.

Radium was employed as a therapeutic agent very soon after its discovery. At first its action did not seem to differ from the action of any other caustic. Dominici, Wickham and Degrais in France and Kroenig and Gaus, Bumm and Doederlein in Germany showed recently that the failures were due to faulty methods. The radioactive substances emit two kinds of rays. The alpha and beta rays which constitute the greatest part of radiation are called soft rays and have little power of penetration. They are absorbed completely by the superficial layers of tissue, and the quantity of the rays entering each cell is so great that all the tissues are destroyed and the action of the rays is caustic. The hard gamma rays represent only about one per cent. of the radiation, they penetrate into the deeper layers of tissue and exert a selective action on certain cells. It is possible that a small percentage of the hardest beta rays have a similar action. The statements as to the depth in which cells may be destroyed by radiations vary between two and nine centimeters. The reason for this discrepancy lies in the different susceptibility of the different cells. The quantity of rays reaching a cell diminishes in square proportion to the increase of the distance. The more susceptible a cell the smaller the dose of the rays needed for its destruction and consequently the greater the distance at which the cell may be still influenced by the rays.

With the small quantities of radium used formerly the gamma rays had no influence on the tissues. The modern method of radium therapy consists in employing larger quantities of radioactive substances and applying them for a longer period of time. The soft alpha and beta rays are filtered off by layers of some heavy metal in order to protect the skin from the caustic action of these soft rays. The methods vary with the different investigators, some of them employing as much as 800 milligrams on one patient at a time. It was shown that, by the use of such extremely large quantities of the substance, the selective action of the rays may again be lost and the whole organism of the patient injured. It would lead too far to describe all the various methods employed by different investigators and the writer will present only his own technic of local application of radioactive substances.

The radium salt is sealed in thin glass tubes. Flat applicators with a radium coating are not used because the main work of the writer consists in the treatment of deep-seated surgical conditions. Furthermore by adjusting one or two radium tubes on a flat piece of rubber and placing it over a skin area the writer was quite successful in treating superficial skin diseases (lupus vulgaris, superficial epithelioma of the nose, eyelid, pruritus, etc.). The glass tube is further inclosed in a silver tube 0.5 millimeter thick. When it is desired to use both the gamma and the harder beta rays the silver tube is covered only with a thin layer of rubber and applied. But in the majority of cases only the gamma rays are used, and then the silver tube is placed inside of a brass tube 0.75 millimeter in thickness. The brass tube is further covered with several layers of photographic paper and cotton in order to protect the skin against the irritating secondary rays which are produced in the metal filters under the influence of the gamma rays, and the whole is placed in an aseptic rubber tube. In order to apply the radium to the different regions of the body the brass tube is attached to different applicators or fastened on a silk or wire thread.

The largest quantity of radium used on a patient at one time is 50 milligrams which is kept continually for two, four, six or twelve hours. In extensive malignant tumors the writer applies the radium for twelve hours of the night every other night until 100 hours of 50 milligrams or 5000 milligram-hours have been given; after this a recess is taken for four weeks and then if necessary another shorter course of treatment is given. This method of the writer implies the use of a comparatively smaller quantity than is recommended by some clinicians. But the results are quite as satisfactory, while the severe injuries to the adjacent normal tissues caused by the very large doses are avoided. Very recently there appeared a report by Schauta, a noted German gynecologist, in which he states that he has employed radium in carcinoma of the uterus by three different methods. At first he used very small quantities of unfiltered radium and the results were all negative. Then he applied very large quantities of radium for several days in succession, and while the malignant tumors disappeared the patients died as a result of injuries of the normal tissues. At present he employs as a maximum dose 50 milligrams during twelve hours. As a result of this method not a single patient of Schauta died and fifty per cent. of the patients are clinically cured. His technic is practically identical with the one employed by the writer and reported by the latter on a previous occasion.

MALIGNANT TUMORS.

The local application of radium finds its greatest usefulness in the treatment of malignant tumors. Radium must not be considered a specific remedy for cancer but a very valuable adjuvant to surgical treatment on one hand and roentgen therapy and diathermy on the other.

Both surgery and radiotherapy are local methods of treatment, and a general dissemination of the disease or metastases in distant organs is at present beyond their reach in the majority of cases. Kroenig reported a case of a metastasis in the lung anatomically cured by radiotherapy. Success in cancer therapy depends upon the destruction of all the cancer tissue in the organism. The advantage of surgery consists in the fact that it removes immediately at one sitting everything diseased. On the other hand it removes with it at the same time a great deal of adjacent healthy tissue. A limit is set to this removal of normal tissue by the fact that vital organs may be injured and consequently the life of the patient endangered. As a result of this a large percentage of cancer patients are inoperable and in a great many of those operated on there are left microscopical islands of cancer tissue, no matter how radical the operation. These small islands develop subsequently into secondary tumors, and the disease recurs. At the most only thirty per cent. of all the cases of carcinoma of the breast, twenty-five per cent. of carcinoma of the uterus and nine per cent. of carcinoma of the stomach can be radically cured by surgery alone. The main advantage of radiotherapy consists in the fact that it may destroy such small islands of cancer tissue without injuring the adjacent normal tissue. The disadvantage of radiotherapy consists in the fact that with our present technic it does not reach beyond a certain depth, and while it destroys the upper layers of a large tumor, the lower part may continue to grow.

The great advantage of the combined treatment is thus self-evident. Surgery must remove the gross tumor whenever possible and radiotherapy must destroy the small islands of cancer tissue which can not be seen by the naked eye of the operator, and which are left behind in the greater number of cases, notwithstanding the most radical operation. In other words the treatment of a cancer patient is not complete unless the operation is followed for a certain length of time by radiotherapy. Cases considered to be inoperable, *i. e.*, where all the cancer tissue can not be removed and a radical operation can not be performed, should be operated upon, with the aim in view to remove the greatest mass of the cancer tissue. This should be followed by radiotherapy in order to destroy the small disseminated remnants of cancer tissue. A number of inoperable cases of carcinoma were reported recently which were improved under radiotherapy to such a degree that subsequently a radical operation could be performed. These cases, no matter how rare they may be, show the urgent necessity for radiotherapy in all inoperable cases not only as a most potent palliative measure, which removes the fetid, obnoxious discharge from cancerous ulcerations and diminishes pain, but also as a preliminary treatment for subsequent surgical treatment. At the most only thirty per cent. of all cancer cases remain cured for five years and over after a radical operation. If radiotherapy should change the figure only to thirty-five per cent. the method of treatment is more than justified. From all the aforesaid it is self-evident that the ideal method of treatment of malignant growth consists at present in the correct combination of surgical and radiotherapy.

CLASSIFICATION OF MALIGNANT TUMORS IN THE LIGHT OF COMBINED TREATMENT.

To facilitate the consideration of the value of combined treatment in the various forms of malignant tumors, it may be well to divide them into three groups as follows:—

CARCINOMA.

Superficial, seated in and under the skin.	Ulcus rodens. Epithelioma of skin. Epithelioma of lip. Carcinoma of penis. Carcinoma of breast. Carcinoma of thyroid. Parotid tumor.
Deep, seated in and under the mucous membranes.	Uterus. Rectum. Vagina. Prostate. Esophagus. Mouth, tongue and pharynx. Larynx. Urinary bladder.
Internal, seated in and under the serous membranes.	Ovaries. Stomach. Intestines. Liver, gall bladder, pancreas. Lungs, mediastinum. Kidney.

SARCOMA.

The first group is the most easily influenced by the rays. In ulcus rodens and superficial epitheliomata of the skin radiation undoubtedly accomplishes as much as the knife. It may even have certain advantages cosmetic and also inasmuch as it does not open the lymph and blood channels and thus allow freed cancer cells to enter the circulation. Very favorable results are obtained by radiotherapy in carcinoma of the penis, the breast, the thyroid and in parotid tumors. But whenever possible an operation should be performed as a preliminary step to the radiation and as much as possible of the primary tumor and of the involved regional lymph glands should be removed. But the radiotherapy should follow immediately, otherwise the tumor, after a partial operation, becomes frequently very malignant and can not be influenced by the rays subsequently.

Carcinomata of the second group are situated within comparative easy reach by the rays, do not attain very great size and present good objects of radiotherapy. As stated above, tubes of radioactive substances may be placed in close proximity to all the parts of the growth. Indeed the most favorable results are obtained in the treatment of carcinoma of the uterus. In a certain number of cases inoperable conditions with involvement of the broad ligaments were rendered operable by a preliminary radiation. In some of these cases the extirpated uteri did not show any cancer cells on microscopic examination.

The other organs of the same group do not yield quite as good results as the uterus. The writer and other clinicians have seen marked improvement in carcinoma of the vagina, the larynx, the urinary bladder, the rectum, prostate and esophagus.

Carcinoma of the mouth, tongue and pharynx usually do not respond well to radiotherapy. Of the latter conditions carcinoma of the tongue is the most refractory. Most probably the cancer cells in these conditions are unusually resistant to the action of the rays. Generally it must be remarked that cancer cells of the same anatomical structure but originating in different organs or even in the same organs of different individuals may react quite differently to the action of the rays. The work is still in the beginning and improved methods will undoubtedly improve the results. This second group of cases will probably become the true domain of radiotherapy. But for the present in this group of cases radiotherapy should also precede or follow surgical treatment and only act alone when the case is completely inoperable. Even then it is advisable to remove the greater part of the tumor with the knife or diathermy and then radiate. Furthermore the preliminary operations of colostomy, gastrostomy, tracheotomy, etc., are frequently needed in order to facilitate the application of the rays.

The third group of cases is the least amenable to radiotherapy. Still there are cases on record where carcinoma of the stomach, the large intestines and even the lungs were very favorably influenced by the rays. Werner and Kroenig report two cases of carcinoma of the stomach which disappeared under radiation. Whenever an exploratory laparotomy is done and an inoperable carcinoma of the viscera found, the tumor should be brought if possible nearer to the abdominal wall, so that it may be influenced subsequently by the rays.

Sarcomata are as a general rule influenced by the rays a great deal easier than carcinomata. But here again the best procedure is to remove surgically as much as possible of the tumor even if the operation can not be performed radically and then follow immediately with radiotherapy.

To recapitulate, the advisability of radiation as an only method of treatment of operable cases of cancer, which is advocated by many noted German gynecologists, must be questioned until a sufficient number of years have passed to show the permanency of the reported cures. On the other hand surgical treatment of malignant tumors is never complete unless it is combined with radiotherapy. All inoperable cases should be radiated not only as a most excellent palliative measure, but in the hope, small as it may be, that the cases may either become operable or else the disease may be arrested and the patient gain months, nay years of comfortable life. In such inoperable cases when the tumor growth is extensive it may be advantageous to destroy the greater mass of the tumor by the aid of the knife or diathermy and then radiate. In any event the diagnosis of the inoperable malignant tumor should not be identical with a death warrant to the patient.

BENIGN TUMORS.

In this class of cases the best results are obtained in the treatment of fibroid tumors of the uterus. The introduction of a tube of radium into the uterine cavity preceded if necessary by a curetage is followed promptly by a cessation of uterine hemorrhage and in many cases by a retrogression of the tumor. These results are most probably due to the action of the radium on the ovaries and also probably on the blood vessels of the tumor, since there are cases on record in which retrogression took place by radiation subsequent to the menopause. Cases of metropathia hemorrhagica can also be treated successfully by radium.

While the operative treatment of fibroids give brilliant results, the results of radiation are equally as good and obviate the necessity of a major operation. It is self-evident that the diagnosis must be established, and the absence of complications or malignancy shown before radiations begin. It is claimed that a sarcomatous degeneration of the fibroid may be overlooked. Such an occurrence is rare in the first place and furthermore if the malignant degeneration take place and the case does not respond to the radiation the operation may still follow. Fully as good results may be obtained by the aid of roentgen rays. Radium treatment requires less time than roentgen, but on the other hand the latter does not require any intrauterine application. Whenever practicable the writer employs in the treatment of fibroid uterus the combination of an intrauterine application of radium and the roentgen rays through the abdomen and back. Thus the best treatment in fibroid as well as in malignant tumors is the correct selection or combination of surgical, radium and roentgen ray treatment. A similar effect might be expected in the radium therapy of the prostatic hypertrophy. The application may be made either by the rectum, by the urethra, or through the perineum. H. Schüller of Vienna reported recently on eleven cases of benign prostatic hypertrophy treated by radium in four of which there was an excellent result. Good results were obtained by the writer and others in exophthalmic goiter by the application of radium as well as roentgen rays. Keloids. papillomata, angiomata, tubercular and other lymphomata wherever situated respond promptly to radium treatment. Urethral stricture if caused by a keloid formation can be cured by an intraurethral application of radium. A case of rhinoscleroma of the nasopharynx of thirteen years' standing in which the patient was being operated on from four to ten times yearly but the disease promptly recurred, which did not respond to roentgen ray treatment, was completely cured by radium by the writer inside of six weeks.

Only these conditions are mentioned in which favorable results were obtained from the local application of radium. This method of treatment is being tried in many other conditions without any result. Radium is not a panacea for cancer or any other disease, but it is a very valuable addition to the therapeutic armamentarium of the surgeon for certain well-defined pathologic conditions. In the hands of one who knows well the mode of action, uses and limitations of the radioactive substances radiotherapy supports and even enhances the results of operative surgery in tumors and allied conditions.

THE USE OF NATURAL AND ARTIFICIALLY PREPARED RADIOACTIVE SOLUTIONS IN INTERNAL MEDICINE.

BY GEORGE D. KAHLO, M.D.,
White Sulphur Springs, W. Va.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

There are few subjects pertaining to medicine that are of greater popular interest at the present time than radiotherapy. The effects of radium emanations when employed locally or generally, as a single measure of treatment, are readily demonstrable by laboratory findings as well as clinical observations. In the use of such complicated formulæ as are usually found in natural mineral waters, it is impossible to separate the effects of their different constituent elements and the problem becomes increasingly difficult when one attempts to determine to what extent the results observed from the use of these waters are attributable to the property of radioactivity, *per se*, particularly when most of the cases treated in this way are under other treatment. I do not refer to medicinal treatment, but to the effects of hydrotherapy, diet and other disciplinary measures usually employed in such connection, to each of which may properly be ascribed a share in the general results.

It has, I think, been pretty well established that one of the important physiological effects of radium is upon uric-acid metabolism, in which monosodium urates are converted into their more soluble forms, thus facilitating their elimination; also, in some cases at least, an influence upon tophi deposits. It can be definitely stated, also, that there is an increased uric-acid elimination and that there is a lessening of these substances remaining in the blood current.

Other results more or less constantly observed have been a decrease in blood pressure, due probably to vascular changes, and an influence upon respiratory changes as shown in the amount of oxygen consumed and carbon dioxid exhaled; also an acceleration of diastasic ferment activity. Radium emanations, however introduced, enter readily into the general blood current and are eliminated chiefly by the lungs, the loss of such emanations occurring in a period of a few hours. Most of these influences have also been observed in connection with the physiological effects of certain mineral waters even before the property of radioactivity was known.

It is generally conceded, I think, that the effects of mineral waters can not be explained on the basis of their chemical analyses alone, and it has frequently been observed that very similar results may be obtained from waters of widely different chemical constitutions. To many the explanation of these phenomena is in the volume of water injested and in the accessory measures of treatment employed, which usually include treatment by baths, diet, systematic exercise, massage and certain other agencies, which constitute what has become popularly known as "a cure." Others, however, believe that even minimal quantities of salts existing in a natural state are of importance by reason of their greater subdivision rendering them more readily absorbed; and the suggestion has been made that possibly the difference observed between the natural and artificial solutions of this nature are due to variations in electrical conductibility of their molecular elements.

Since the discovery that certain mineral waters are possessed of the property of radioactivity, the attempt has been made to explain much that has hitherto seemed unaccountable on such an hypothesis. In support of this contention it has been pointed out that many waters of feeble mineralization and of known therapeutic potency have a high degree of radioactivity. Such a supposition would seem tenable at least in the stronger waters; for example, those of Bad Gastein, the physiological effects of which bear a very close resemblance to those of radium when employed in other forms, but I believe that this same influence may be seen in waters possessing this property even in slight degree, although it may seem a little premature to make any positive pronouncements of this nature.

I have, unfortunately, no data to offer in proof of such a contention, nor, as far as I am aware, have others working in this field been able to do this. But an experience of some years in balneologic practice in different places, together with considerable opportunity of observing the work of others, forces upon me this conviction. One factor that has influenced me in forming such an opinion, in addition to the results obtained from certain seemingly indifferent waters, has been the fact, long since observed, that mineral waters are generally less potent in their action when taken in bottled form than when used at their source, this difference being due, I believe, in part at least to the loss of radium emanations.

Another point to be considered in this connection is that water of different springs, the chief chemical ingredients of which are practically the same, although differing slightly in some of their minor ingredients, are often found to have widely different physiological effects. Still another, and to my mind even more important, is that condition in which radium therapy finds its chief indications, and in which good results have been most constantly observed, are for the most part the same as those in which mineral waters have been found to act most favorably, notably those associated with disturbance of metabolism.

Unfortunately, results are often claimed for both of these agencies which can not be supported by actual clinical experience, nor is the emphasis that is sometimes given in the literature of mineral water resorts to the effect that the waters are radioactive always in proportion to the degree of radioactivity found.

In the light of our present knowledge, however, we are hardly justified in assuming that comparatively slight degrees of radioactivity are without influence any more than that seemingly infinitesimal quantities of salts are insufficient to produce their characteristic physiological effect.

Radioactive mineral waters when offered for sale in bottles, however, are misleading; for, as is well known, this property although present in considerable degree when the water is taken from the spring, disappears in about the ratio of fifty per cent. in the first four days, ninety per cent. after twelve days, and in approximately a month's time is lost entirely. All physicians who are seekers after the truth will earnestly support any effort to safeguard the public against misbranding in any form. This does not apply, however, to solutions containing radium element.

While most of us attach more or less importance to psychological influences when legitimately employed, we can not, I think, condone the dishonesty of spurious claims made in behalf of mineral waters and proprietary remedies any more than we can the action of unscrupulous physicians who prey upon the credulity of the sick.

Mineral waters owe their radioactivity in most cases to radium emanations existing in the form of gas and not to the presence of radium element; hence, as has already been pointed out, the results to be expected from this influence are more or less ephemeral. In order to utilize this influence, therefore, it is necessary that they be taken at their source. Of all means of introducing radium emanations into the system, that by the injestion of natural radioactive mineral water is the simplest and, in many cases, the most reliable method. Mineral waters when taken at frequent intervals covering a period during which such treatments are usually given, produce an effect upon metabolic changes which is quite as certain and probably as lasting as when radium emanations are introduced in any other form.

Used in this way, also, the effects of radium emanations are supplemented by those of the salts contained in the water. The effects of radium baths are, I am inclined to think, mainly those of the inhalation of emanations given off by the water, and are modified by the temperature and duration of the emersion. I have also employed to some extent emanations in other forms, but my experience has not been sufficiently convincing as to the benefits to be derived from these measures whether their source be from artificial solutions or from natural mineral waters to warrant any positive conclusion. It need hardly be reiterated, however, that it is difficult to separate the effects of different measures employed together, and with a class of patients such as a majority of those with which I have to deal, one can not employ a single therapeutic agent, as I have seen done in the clinics abroad.

Of the diseases in which I have observed the best results from radium therapy in its various forms, gout, unquestionably, stands first, and particularly is this true, I think, as regards the effects of radioactive mineral waters. I must repeat, however, that these results are probably in considerable measure attributable to the salts contained in the water, and to some extent, also, to the increased amount of fluid injested, as well as to dietetic restrictions and baths, which, in most cases, have been employed in conjunction therewith.

Rheumatoid arthritis ranks perhaps second. In my own experience some cases have shown decided improvement, while in others the results have been disappointing, even though the effect of the mineral water has been supplemented by baths, inhalations and the drinking of artificially charged waters. Rheumatism is less certain in its response to these measures, although good results are frequently observed.

I have for many years been impressed with the influence of alkaline mineral waters in the treatment of diabetes, an influence hardly less important, I believe, than the regulation of diet. This probably is, I believe, also largely attributable to the effects of radium emanations in modifying metabolic changes, as in gout and other intoxication.

Radio-chalybeate waters act most favorably in the various forms of anemia, an effect which has been observed in radium therapy in other forms, and hardly to be accounted for by the iron salts alone. Neuritis, neuralgia and other diseases of the nervous system depending upon toxic influences are likewise quite generally benefited by radioactive mineral waters.

Acute conditions and severe forms of some of the diseases already referred to, when existing in debilitated subjects, are, in general, contraindications for the employment of either mineral waters or radium treatment. The exact status of radium therapy has yet to be determined, and much additional data based upon further scientific research, combined with a wider clinical experience, is necessary before we can form positive conclusion. Especially is this true, I think, as regards the effects of radium emanations derived from mineral waters. All that we can say at present is that probably some of the effects of mineral waters of this type are due to this property, but how much and to what extent these are contributed to or modified by other constituents of the water remains to be proven.

THE INTRAVENOUS INJECTION OF RADIUM ELEMENT.

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New York.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The field of our knowledge of the therapeutic uses of radium has been only scratched. Particularly is this statement true of the employment of radium in this country in hospital and private practice; and more especially does it apply to internal treatment. By internal treatment is meant the introduction into the human system by means of ingestion and injection of the radium element. For the purpose of discussion the scope of this paper will be confined to the instillation of radium into the blood of the veins.

The intravenous method has the advantage of carrying directly through the body by means of the circulation a definite and accurately determined amount of radium. What exact change takes place in the metabolism of the human body we can only infer by observing the relations between cause and effect. Therapeutic action in agents administered in this manner should theoretically begin immediately and results ought to be obtained much more quickly than by any other less direct method of administration. Dr. Frederic Proescher has determined by means of his valuable experiments among humans as well as animals that the radium is carried through the body when injected intravenously, and is deposited in the form of carbonates and sulphates. A small amount of radium is excreted, the greater portion however being deposited in the bone marrow. The human organization therefore becomes actively radioactive. To quote Dr. Proescher "in other words the body becomes a vital emanatorium due to the deposit of radium salts." How active the radiation is depends, I presume, upon the amount of radium retained in the body. What the limit of safety is I am unable to state. In some forty patients treated by me the highest amount given a patient at one time was 100 micrograms of radium and the smallest amount 50 micrograms. I believe that with much larger doses I would have obtained more satisfactory results, but the experience being new to me I had to proceed with caution.

The technic of the injection is very simple. For each injection radium in the form of a bromid is dissolved in physiological sterile salt solution in a sealed glass ampule. Each ampule contains two to five cubic centimeters of fluid. The Radium Company of Pittsburgh make these ampules and put in each whatever amount of radium is desired. The injections are given into one of the larger veins at the fold of the elbow, by means of an all-glass sterile syringe. To perform this little operation easily the veins are distended by means of a firm rubber tube twisted once around the middle of the upper arm. The needle, separated from the syringe, is inserted into the distended vein, a steady stream of blood showing when insertion is perfect. Every drop of the radium solution is sucked into the syringe and the air expelled. The syringe is inserted into the bleeding needle, the tourniquet removed, and the fluid slowly injected. Pain is very slight or not present at all, and only caused by the prick of the needle through the skin into the vein. Local reaction, if present, is very slight, and in most cases there is none whatever. These injections were given for various pathological conditions.

This paper is entirely a clinical one and deals only with the cases in the author's experience, recording the changes which follow the injections of the radium element into the blood in the form of a solution of the bromid salt.

These are the cases in which I have used one or more injections of radium bromid solution into the veins:

Mrs. B., forty-six years old, a dressmaker. Diagnosis: Multiple rheumatoid arthritis. First seen September 16, 1913. Patient had been confined to her bed for the preceding two years. Principle joints affected were the knees, ankles, wrist, elbow and shoulders, as well as the carpometacarpal and tarsometatarsal and phalangeal articulations. No fever, pulse normal, but severe pain was continually present, aggravated by any attempt of flexion of the joints. No history of cause of infection obtainable, but the patient had bad teeth, many of them being broken off, and the roots were decayed and tender. She had also Rigg's disease of the gums. X-ray plates showed disease of the roots of several of the teeth and small abscess points in the sockets. Patient is unable to use her hands and fingers without pain. The other joints are also very painful. The pain is so severe that at night her sleep is broken. Her appetite is poor; she is steadily losing weight, and her mental condition is depreciating. She has been treated for rheumatism by various medical measures, as well as a series of injections of pituitrin and pneumococcus vaccines, both of which proved nonbeneficial. She had a blood pressure of 142 to 158. Red blood cells averaged about 3,000,000; white cells, 6250; polynuclear cells, 84 per cent.; coagulation time, about ten minutes; hemoglobin, 72 per cent. The first injection of 50 micrograms of radium bromid was made into the basilic vein of the right arm on December 21, 1913. Again two weeks after this 100 micrograms were injected. Two succeeding injections, two weeks apart, of 50 micrograms each were given. She received 300 micrograms of the radium bromid solution all told up to the 30th of March. The effect of the radium in this case was striking. She had no reaction following the injection at any of the times of application, the only thing she noticed was a tendency to sleep. Within a few hours after the first injection the patient was able to use her hands and fingers without pain. The pain in the other joints also slowly disappeared. She began at once to take on weight, and there was a marked improvement in motion about her joints and muscles. April 2, she was able to use her fingers in her avocation as dressmaker, sewing, threading needles, tying knots, etc. The joints of the feet, ankles and knees have shown the least amount of improvement in motion. Pain and tenderness however are markedly less. The patient for the first time in many months is able to be out of bed in a rolling chair. Her appetite is improved, and naturally her general health is much better. Swelling is still present in many of these joints as well as considerable deformity. The blood picture shows startling differences. The red blood cells increased to 4,500,000 immediately after the first injection, and have remained at about that average. The white cells have slightly increased, averaging about 6800. The polynuclear cells have decreased, averaging about 78 per cent. Lymphocytes have markedly increased. Coagulation time was lessened to an average of three minutes. Hemoglobin is increased to 90 per cent. Blood pressure now runs from 136 to 132 and is at times down to 98.

During the treatment the patient's mouth and gum condition was also cared for carefully. The roots and decayed teeth were extracted and the Rigg's disease was treated, until at present her mouth condition is quite normal as far as any inflammatory process is concerned.

M. F. Male, thirty-one years old. Rheumatoid arthritis of six years' standing. Etiology unknown, but he has poor teeth and retracted gums. All his joints are involved, especially the knees. He has marked trismus of the jaws, and is unable to swallow any food except liquid because of inability to masticate. The vertebral joints are all more or less fixed, painful on motion and more or less tender to touch. The patient is troubled with frequent and painful urination. He has to lie almost continually on his back, his head propped slightly on pillows. Blood count before the first injection showed red blood cells 4,328,000; white cells, 8000; polynuclear, 87 per cent.; hemoglobin, 90 per cent.; coagulation time, twelve minutes; blood pressure, 114. This was on February 20. On February 24, 50 micrograms of radium bromid were injected into the median basilic vein. There was no reaction following this injection. The following day the blood count was red blood cells, 4,888,000; white cells 9200; polynuclear, 81 per cent.; hemoglobin, 90 per cent.; coagulation time, eleven minutes; blood pressure, 104. The trismus was markedly less, pain about the joints much less marked, mobility freer; sleep much improved; urination interval much lengthened, and voiding much less painful. March 19, again 50 micrograms of radium were injected into the same vein. On the following day all the symptoms above mentioned were greatly improved. Appetite was much better and sleep almost normal. In the first twelve hours after this injection a slight reaction occurred; slight chill, temporary increase of pain in the knees, and a headache, all of which passed off in a few hours. On the second day after the injection the blood count was red blood cells, 6,104,000; white cells, 10,000; polynuclear, 50 per cent.; hemoglobin, 100 per cent.; coagulation time, nine minutes; blood pressure, 110. The patient's improvement at the end of three weeks after the second injection continued. The most striking evidences of the result of the radium were relief from pain, ability to sleep and improvement in appetite. A great change was noticeable in the motion of the jaw joints. Before the injection the patient could separate the upper and lower jaws only about enough to insert the handle of a teaspoon flat. Now he is able to take food into the mouth and chew it. Also he is able to protrude his tongue so that observation can be made of it.

A. W., aged thirty-two, had multiple rheumatoid arthritis, principally affecting the knee and shoulder joints. He has a history of bad tonsils which were removed several months ago. The attacks have been coming on for two years, each one worse than the last. February 10, the day before his first injection, the blood picture was red blood cells, 3,870,000; white cells 7200; polynuclear, 78 per cent.; hemoglobin, 80 per cent.; coagulation time, ten minutes, blood pressure, 155. He had two injections, two weeks apart, beginning February 11. Following each injection he complained of sleepiness. No reaction. He had immediate improvement in his blood picture, in coagulation time, and in blood pressure, the latter dropping on the second day to 125. On March 11, four weeks after the first injection the blood picture was as follows: Red cells, 5,200,000; white cells, 6800; polynuclear about 68 per cent.; hemoglobin, 100 per cent.; coagulation time, five minutes; blood pressure, 120; joints much improved; tenderness less; motion good. Patient is able to walk about, and has been discharged from the hospital to go back to work.

Mrs. E. H., aged forty-one, had postoperative arthritis of right knee. This patient was operated on in the usual manner for fracture of the patella October 5, 1913. She did rather badly after the operation, having a good deal of pain in the knee, swelling and edema of the foot and leg. Slight infection of the skin wound was found on removal of the sutures, with well-marked involvement of the structures of the knee joint. Under careful treatment the acute symptoms disappeared without suppuration taking place, but the joint remained swollen, tender and painful for a number of weeks. X-ray picture showed at the end of two months the patella fragments united and some evidences of osteitis in the head of the tibia as well as marked thickness of the cartilaginous structures. On March 1, 1914, the patient was still in bed with a posterior moulded splint supporting her right knee joint, well-marked edema of the foot and leg, great tenderness and pain on motion of the joint, and considerable swelling and redness over the contour of the right knee. On March 8 the blood picture showed red blood cells, 4,800,000; white cells, 12,000; polynuclear, 55 per cent.; hemoglobin, 80 per cent.; coagulation time seven minutes; blood pressure, 100. The usual injection of radium bromid was made on March 9, after which she complained of sleepiness. This lasted several days. The second day after the red blood cells were 5,176,000; white cells, 11,800; polynuclear, 62 per cent.; hemoglobin, 80 per cent.; coagulation time, six minutes; blood pressure, 98. Pain was markedly alleviated. There was slight increase in the mobility of the joint, and at the end of the fourth day reduction in the swelling over the knee itself was quite noticeable. The patient's general condition was markedly improved, probably due to better sleep. March 16, the injection was repeated and on March 19, all the above improvement was retained and increased. The red cells were now 5,600,000; white cells, 7800, polynuclear, 77 per cent.; hemoglobin, 85 per cent.; coagulation time, three and one half minutes; blood pressure, 92.

Mrs. M. F., aged forty, had arthritis of left hand and wrist. Patient had several attacks of rheumatism in various joints at different times preceding her admission to the hospital, had also a history of endometritis four years previous. Present illness began October 31, 1913, with chill, fever, pain, and swelling in various joints, all of which cleared up under medical treatment except the left wrist and hand. At present, February 28, all the fingers and the thumb are stiff and painful, wrist joint swollen and tender, and motion almost restricted because of pain. In January a gonorrheal fixation test was positive. Various and persistent methods had failed to produce any improvement. Diagnosis was made of gonorrheal rheumatism. Patient was given 50 micrograms of radium intravenously on March 5 and also on March 16. Before the first injection the blood picture was red blood cells, 5,392,000; white cells, 18,002; polynuclear, 66 percent.; hemoglobin, 90 per cent.; coagulation time, eight minutes; blood pressure, 115. After the second injection the red blood cells were 5,800,000; white cells, 10,000; polynuclear, 48 per cent.; hemoglobin, 100 per cent.; coagulation time six minutes. The blood pressure dropped to 98, afterwards ascended to 100, and remained at that point. Of the symptoms pain was alleviated within the first twenty-four hours; swelling much reduced; movement in the fingers and at the wrist joints markedly increased. Patient's appetite and general condition improved, and she is able to make use of her hand to the extent of picking up objects, sewing, rolling bandages, buttoning and unbuttoning her clothes without pain. She was able to sleep much better after the injections.

C. H., thirty years old, had polyarthritis, has been ill with rheumatism involving gradually all his articulations. First attack took place three years ago after an operation for acute appendicitis. Patient is confined to his bed, and has been unable to walk for nearly two years. Shoulder, arms and hand joints, as well as the ankle, are very tender and painful on motion. There is no swelling of any of the joints. Weather apparently has no effect on his rheumatic condition. Appetite is good, mind clear, and general condition otherwise good. Patient is somewhat anemic and does not sleep well. On October 10, 1913, he had 50 micrograms of radium element with no reaction. Patient felt sleepy within a short time after injection, and for several days seemed to have less pain in the articulation and was very hopeful of improvement. At the end of six weeks pains were much less marked, sleep had been considerably improved, and patient seemed, on the whole, slightly better. The same amount of radium was then injected and improvement continued for about six weeks. Then he began to feel worse again, and at the end of another six weeks the injection was repeated. Again there was a temporary improvement, but more rapidly again the patient's condition became worse. At the present time nearly a year after the first injection of radium his condition is only slightly better than at the time of the first injection. He has had six injections all told of 50 micrograms each at rather long intervals. This man has now very severe attacks of pain in different articulations at times; is very discouraged, and is considering the removal or the drainage of his transverse colon according to the suggestion of Mr. Lane. This case is undoubtedly a failure as far as radium is concerned. I do not believe however that radium had a fair chance because it should be given earlier and in very much larger doses. This seems a fair assumption because he improved quite a little after the first dose, and remained fairly comfortable after the second and third, although given at long intervals. My suggestion now would be that he should have been given 100 micrograms the first dose and from 200 to 300 the next time or that the smaller doses should have been given much more frequently, within a few days of each other.

Sister S., a religieuse, twenty-four years old, has a polyarthritis; began three years ago. Most marked in the small joints of the fingers and toes of both sides. No cause can be discovered. No buccal, tonsillar, or throat symptoms; no uterine or alimentary cause can be discovered. She complains principally of pain in the right ankle and in the right metacarpal phalangeal joint. There is no swelling. August 2, she was given an injection of 50 micrograms of radium element with no reaction. The following day great improvement was noted. Pain in all the joints was less marked, particularly so in the right hand and foot. At the end of three weeks, although the improvement continued, at her own request she was given another injection. She is now able to go about comfortably and has returned to her duties. There was no change in the blood pressure or blood picture following the injection in this case.

Mr. M. T., lawyer, fifty-six years old, had been suffering from arteriosclerosis for several years. His blood pressure had been about 230 for the last eighteen months. Remedies of various kinds as well as careful diet has not made any impression upon this condition. On March 20, 1914, he was given an intravenous injection of 50 micrograms of radium bromid. At the end of six hours his blood pressure was reduced to 196. At the end of a week it was 190 and remained so for two weeks when it began to go up again. April 15, his blood pressure had returned to 230 and another 50 micrograms of radium bromid was injected. The following day his pressure was 190 where it remained for several weeks until his death in July from uremia.

H. B., male, fifty years old, has a history of arteriosclerosis and nephritis, with a high blood pressure of 230. He was given 50 micrograms of radium bromid with the object of seeing the effect on his blood pressure. His only reaction was a slight headache. His blood pressure at the end of four hours was 210; at the end of eight hours it was 190. The following day it was reduced to 160, where it remained for about a week, when he died from his nephritis. This case was hopeless when the patient was first seen. He was water-logged with ascites and suffering from alcoholism. The radium was given to him simply to see the effect on his very high pressure.

P. M., April 11, 1914, had a chronic nephritis with contracted kidney. This patient was a man forty years old, who was a heavy beer-drinker, and whose habits were otherwise bad. He had blood pressure of 156. On the day after his admission to the hospital he received 50 micrograms of radium bromid. In the first twenty-four hours his blood pressure fell to 140 and remained so until he left the hospital at the end of two weeks. There was no reaction.

Second case, similar to the above, was a man at Bellevue Hospital, thirty-two years old, a bartender who was suffering from chronic nephritis. Patient had pronounced secondary anemia with a blood pressure of 160. He received 50 micrograms of radium element in the solution of the bromid salt. At the end of twenty-four hours his blood pressure was 140 and remained so during his stay in the hospital. He left the hospital at the end of three weeks greatly improved in his general condition, with a large increase in his red blood cells and great improvement in the hemoglobin.

The four preceding cases were taking other treatment for their pathological conditions and I only report them as cases of fall in blood pressure after the injection of radium.

Miss M. S., thirty-three years old, was a clerk. Early in December, 1912, a rapidly growing lump appeared on the inner side of the right arm just above the elbow. This was removed late in January, 1913. It was the size of a hen's egg at that time. It recurred again, and she was operated upon in March, 1913. After a fourth recurrence she was operated upon in June, 1914. At this time the growth was about seven inches long and an inch and a half wide at the broadest part. The pathologist's report of it was that it was a sarcoma of the round-cell variety arising from the intermuscular fascia. It was not connected with the bone. After the last operation the wound was completely healed on June 11. On July 22 a lump was appearing again on the inner and upper surface of the arm several inches in extent involving all of the site of the old operation wound and extending beyond it. She had been treated by *x*-ray applications three times for twenty minutes each time, with a brief interval of days between each application. August 1, 100 milligrams of radium element were applied in divided doses covering the whole extent of the tumor which had now become well marked and hard. Before making the application it was noticed that at several parts the tumor was inflamed and tender. The radium application was left on at this time for eighteen hours. August 10, the tumor was much less marked in extent, much softer and no longer painful. The skin however over the site of the growth was quite red. The patient developed a very persistent cough, rather rapid respiration, about thirty a minute, rapidly increased upon exertion. At night her cough was very distressing and kept her awake. X-ray picture was taken of her chest, showing infiltration and metastatic deposit in both lungs. August 22, patient had a well-marked blister and *x*-ray burn all over the site of the radium application. As far as could be made out however the tumor had entirely disappeared. Her cough was continuous and very distressing. Fifty micrograms of radium were injected into the basilic vein of her right arm. That afternoon, that night, and the following day and night the cough was entirely relieved and the patient was able to sleep. September 10, the radium burn and blister was slowly healing, and there was very little evidence of the tumor remaining in the forearm and arm, but the cough had returned and was very troublesome. Patient's general condition was poor, principally due to inability to sleep. September 18 another injection of 50 micrograms of radium was given. The cough was considerably relieved the following night but the patient's condition was growing worse. September 21: Patient is no better, cough still troublesome, very slight relief, if any.

Miss S. R., fifty-two years old, housewife, has been ill for two years with pain in the stomach: nausea, vomiting, jaundice, loss of weight, all of which symptoms have been rapidly getting worse in the past few months, until now the pain and vomiting are almost incessant, both made worse after taking food. An irregular mass covering several inches in extent, and tender to the touch is made out in the epigastric and right hypochondric regions. Examination of stomach contents showed absence of hydrochloric acid and the presence of lactic acid and blood cells. Diagnosis: Carcinoma of the stomach. Patient also has a chronic nephritis. She was first seen August 10, 1913. August 20, she was given an injection of 100 micrograms of radium element into the large vein of the elbow. There was no reaction. Pain became very much less and the patient was able to take food for several days without vomiting and without stomach distress or pain. At the end of two weeks, pain and vomiting having returned, she was given another injection of 100 micrograms of the radium. Relief was immediate and the patient was again able to eat nourishing food and retain it. In the next two or three weeks the Bright's disease became considerably worse and she died September 20 of uremia.

The above two cases are the only ones the author has to report of injection of radium into the blood for the relief of cancer. In one case an endeavor was made to relieve a distressing cough by means of emanations into the lung from the blood itself if that be theoretically possible. In this and in the preceding case cure of the cancer was not expected. In the latter the growth was too large and the condition of the patient too critical to hope for anything except relief of symptoms, and for the reasons given above operation was out of the question. The effect of the injection upon the pain was most interesting. Within an hour it had disappeared and remained away for several days in spite of the ingestion of food into the stomach. No reaction followed the injections in any of the patients except in one case a severe headache the next day, and in another case slight chill, fever and increase of pain about the joints for two hours. No local reaction was noticed in any of the injections.

From a study of these patients the following facts concerning radium therapy may be assumed: Radium injected into the veins relieves pain; it improves the blood picture in anemic and cachectic patients; it causes absorption of deposits around chronically infected joints; it reduces high blood pressure, lessens the coagulation time, and has a certain definite effect as a hypnotic.

Probably the results obtained would have been more satisfactory if the remedy had been employed more frequently, in larger doses, and earlier.

THE RADIOACTIVITY OF SARATOGA SPRINGS WATER.

An estimation of the radioactivity of Saratoga Springs Water, made by the U. S. Bureau of Mines, shows that the activity is due in the main to radium emanation, which is therefore readily lost, and not to dissolved radium salts. The total activity of the waters is rather low, that of the Crystal Rock Spring, though not exceptional, is considerably above the average. The activity of different springs varies widely, some being more than twenty times as active as others. A similar variability is known to exist at Hot Springs, Ark., but only the vaguest information has been made public by our government.—*Jour A M A.*, Aug. 29, 1914, p 788 and 795

RADIUM IN CUTANEOUS LESIONS.

BY WILLIAM ALLEN PUSEY, M.D.,
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(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The most satisfactory way in which to get at a grasp of the therapeutic possibilities of radium is to consider first what is known of its effects upon tissues; and this I will attempt briefly to do.

The rays from radium produce their effect upon living tissues by acting on the cells themselves, as is the case with the actinic rays of light and with x-rays. It is a direct effect upon the life-processes of the cells, which manifests itself first in a stimulation of these processes and, if carried further, in an overstimulation that may pass the boundaries of repair and result in the destruction of the cells.

As would be expected of such a reaction, tissues of greater vital activity are more sensitive to it and those tissues whose function is chiefly structural are least so; but no living cell is of such low vitality that it is beyond overstimulation by these rays, and a radium reaction may be so intense as to destroy any living tissue. Embryonic cells and many diseased cells are highly sensitive and quickly go on to overstimulation and destruction under the attack of these actinic rays.

To limit our consideration to the effects upon the skin, or its analogue, mucous membrane (my field to-day), the manifestations of a radium reaction are seen first in the endothelium of the superficial vessels, and almost as soon in the more highly differentiated epithelium of the glands of the skin—the hair follicles, sebaceous glands and sweat glands; then in the deeper cells of the epithelial layer; and, after this, in the connective tissue structure of the skin.

In a general way, these manifestations of the reaction first show as an over-stimulation of cellular activity, which quickly passes on to cell degeneration and destruction, with obliteration of small vessels in the skin, destruction of follicles, the formation of a necrotic pellicle on the surface epithelium, and, in the corium, in addition to the vascular changes, edema, round-cell infiltration and all the manifestations of an acute inflammatory reaction with destruction of some of the connective tissue elements. If there are diseased cells in the exposed area, such as a nodule of epithelioma, these are likely to succumb first to the attack. The extent to which the cells succumb depends upon their character and upon the intensity of the reaction. Unless the reaction has been carried beyond all bounds only the more susceptible cells succumb, while the less susceptible tissues, *i. e.* surface epithelium and connective tissue stroma, which have not been destroyed gradually return to normal. The resulting skin, while smooth and little changed on the surface, represents scar tissue. Capillaries and, it may be, larger blood vessels have been destroyed, compensatory hypertrophy has occurred in others (that accounts for the telangiectases in radium and x-ray scars), hair follicles, sweat glands and sebaceous glands have disappeared in part or entirely, and the more complex structure of the normal corium has been replaced by connective tissue. If there were present in the area pathological tissues these too are likely to have been replaced by scar tissue.

The foregoing summary represents accurately, but of course only in a broad way, the effects produced in the skin by exposure to radium rays, and it is easy to develop from a consideration of these effects the rational therapeutic indications of radium in skin diseases.

1. Radium may be used, in short exposures, as a stimulant in certain dermatoses where the obscure effect of irritation in overcoming chronic inflammatory indurations has proved useful, as in patches of chronic eczema, in lupus erythematosus, in lichen planus, and psoriasis. In these conditions and in others similar, it has been found of value. Of course the practical difficulty in its use in many of these conditions, and in others still to be considered, is the limited area of its application.

2. Radium may be used to destroy hair follicles, sebaceous and sweat glands, blood vessels, and other highly differentiated structures in the skin. Sweat glands, sebaceous glands, and hair follicles may be destroyed with radium It is however not a practical

means for treating extensive hyperidrosis, or acne, or for removing hairs, for two reasons: (1) The limited quantities of radium available; (2) the permanent changes that are likely to be produced in the skin by exposures intense enough to destroy any of these follicles; these are atrophy with a tendency to the formation of dangerous keratoses, and disfiguring dilated capillaries or telangiectases.

The important practical application of this therapeutic indication for radium is in nevi. The nonvascular nevi consist as a rule chiefly of an excessive formation of highly differentiated tissues (pigment cells, hair follicles, sebaceous follicles, endothelial cells) and their destruction by radium is a rational and practical procedure, which much experience has justified.

In vascular nevi radium has perhaps its most nearly unique value. As was shown several years ago, it can be used with success for the destruction of the excess of blood vessels that constitute these lesions. It is most valuable in the flat port-wine marks, against which we have no other satisfactory method of treatment, unless it is the application of x-rays with a most skillful technic. It is equally as effective for the treatment of nevi composed of larger blood vessels or thicker masses of blood vessels.

3. Radium may be used to destroy masses of diseased cells in the skin. The most interesting field for the application of this therapeutic indication is in the treatment of epithelioma, and other carcinomas. In suitable cases radium offers an eligible method of treating epithelioma. The method is convenient for the physician and easy for the patient, the scars are as slight as possible, and the results permanent. The first essential of a suitable case for treatment with radium is that its successful treatment should not involve the destruction of contiguous glands; if the case is one in which conservative surgery requires the removal of neighboring glands, primary treatment with radium is not justified. The second essential is that the epithelioma should not extend beyond the limitations of application of the quantity of radium available for its treatment. Unless one has a relatively large quantity of radium the method is chiefly useful with small epitheliomas, but extensive epitheliomas can be handled with even small quantities of radium by many prolonged applications.

Of course warts, moles, senile keratoses, and many other tumors of the skin can be treated with radium with the same success as epitheliomas.

In the foregoing I have only attempted to give an outline of the uses of radium in lesions of the skin. The subject can only be sketched in the few minutes that I may claim from you, and I have thought it best to touch upon the principles of its application and to outline its therapeutic uses as based upon these; for with a grasp of these principles one can readily deduce for himself its various possible applications.

As a matter of fact these indications for the therapeutic uses of radium are exactly those of x-rays; and this brings us to the question of the relative value of the two agents.

In my opinion the effects of the rays of radium and of x-rays upon living human skin are as identical as they are upon the silver salts of a photographic plate. Macroscopically and microscopically no essential, or, I would say, real distinction can be found between them. Various minor differences are indicated by different men between radium burns and x-ray burns; I have observed as carefully and as intelligently as I am able to do, burns of various degrees from both agents, and personally I do not believe these differences exist. The same is true, I believe, of their therapeutic results; they are in my opinion identical. This judgment does not agree with those who want to see, and I have no doubt do see, a difference between the two. In arguing for a difference, much stress is usually laid upon the point that a given case, usually an epithelioma, has failed to yield to x-rays and has yielded to radium, or *vice versa*. As a matter of fact this argument is of no value. I have cured with x-rays literally scores of epitheliomas that gave histories of having failed of cure with x-rays and a few that gave the same history with radium; with the same argument upon my experience you would conclude that x-rays differed not only from radium rays, but also from themselves. The real fact is that a man succeeds with the one agent or the other according to his skill and judgment and experience in its use.

Of course there are differences in the practical applications of the two agents, but these are not differences in their essence. Radium is easier of application, is adaptable to insertion in lesions, and the dosage with a given quantity of its salt is accurate; and these are valuable advantages at times. X-rays have the advantage of furnishing in an average apparatus an enormously greater amount of energy than is to be had from any available quantity of radium, and that is at times an enormous practical advantage for *x*-rays. On these relative practical advantages of the one agent or the other are based the differences in their value in different lesions.

A COMPARISON OF THE USES OF THE ROENTGEN RAY AND OF RADIUM, WITH LANTERN DEMONSTRATIONS.*

BY W. S. NEWCOMET, M.D.,
Philadelphia.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The selection of cases for treatment by either roentgen rays or the natural radiation depending upon the activity of one of these radioactive salts is often a matter that must have some degree of latitude and can be determined in a measure by the supply and demand, which also to some extent might be altered by individual equation on the part of the subject or perhaps the opinion of the operator. Generally however these cases may be divided into four distinct groups: (1) Those cases where the roentgen radiation appears to be more acceptable; (2) those where natural radiation can be employed to a greater advantage; (3) those which occupy a middle ground where both forms of radiation appear to be equally acceptable and likely to produce the same result and where the election of either is only a matter of convenience; (4) those where both roentgen and natural radiation are employed to advantage.

The third group of cases is decidedly the largest while the fourth is the smallest. Cases included in the first, second and third groups may be decidedly decreased by excluding those amenable to other good reliable and economical methods of treatment, and, upon a broad principle, the only cases that should be submitted to radiation are those to which other forms of relief are contraindicated. This article will deal only with a selection from severe grades, where it is not so much the matter of adopting radiation as a form of treatment but rather the form in which radiation is to be administered to obtain the best results.

If it is to be employed in the treatment of malignancy, the prognosis depends upon the character of the disease, the idiosyncrasies of the individual and the manner in which the radiation is given. When these three factors blend favorably good results may be expected.

At the present time a wave of excitement is passing over this country in favor of the radiation from radium and thorium; many cases are being reported which seem to prove its usefulness. This reaction in favor of radium is, however, about to be followed by another supporting a new form of roentgen radiation where ultra penetrating rays are to be employed; this new method, however, on account of the many accidents in the early days of radiation, must be adopted only by those operators who observe a most rigid technic. A number of cases have come under observation which prove that some careless technic exists even at the present day. Cases where unnecessary *x*-ray exposure has been made over areas not requiring treatment are typical examples. This may be attributed to the very wide application of the roentgen ray by many who have had limited experience with its properties and not until some accident has happened do they realize its danger.

This protest against careless technic does not necessarily mean that those who employ the roentgen ray must adopt some one of the very rigid and precise methods used by the "dosage enthusiast."

No doubt a frequent cause of resultant disappointment in cases brought under the influence of the roentgen rays is due to an error of diagnosis. From observation of patients sent to the American Oncologic Hospital in the last six months three cases of gumma were thought to be carcinoma. Two of these patients had visited other institutions where most serious operations had been contemplated. All reacted promptly to the regular methods of treatment.

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*This paper was illustrated by lantern slides of about thirty cases; due credit must be given to Dr. C. B. Longenecker for his able and timely aid.

While incorrect diagnosis and the misapplication of radiation are responsible for many of the failures, on the other hand many occur when treated under the most favorable circumstances; this is unfortunate, but no doubt as our technic improves, so likewise better results will follow.

Failure is often due to the advanced condition of the disease; it would seem that many cases are withheld until all hope of any form of treatment is beyond question. Few realize that radiation does not interfere with other methods and in many instances the combination would be far better than the one alone. However, under all circumstances advanced cases of malignancy should be given the benefit of the doubt, as they often react for a time at least, while in others the analgesic effect is most grateful.

Some authorities have stated that the effect of the beta and gamma rays upon the human organism is exactly the same as the roentgen ray. This point is open to question, for observation upon various cases seem to lead to different conclusions. Those experienced in both forms of radiation must be impressed by the difference in the character of the reaction produced; therefore, if the character of the local physiological reaction differs, necessarily the therapeutic action must be somewhat different. Allusion has been made to this point in other papers, consequently, at this time, mere reference to it without detail is sufficient. Furthermore, if these rays are identical why then the expense of radium? At the same time it is admitted that there is a difference between the effect of high and low radiation for a roentgen tube.

In this review the selection of cases for treatment with radium was taken from those for which radiation by the roentgen rays was contraindicated; in most instances having been employed without success. Such cases as carcinoma of the rectum, vagina or uterus were chosen, also those occurring in the nasal or buccal cavities where the chief indication for the use of radium was the impracticability of applying roentgen radiation due to the difficulty of adjusting the apparatus in order to bring the field of radiation into view without injury to surrounding tissues. Several small epitheliomata occurred about the eye within a few months after *x*-ray treatment and of that type which are occasionally seen where the ulceration is larger and healing more difficult with each recurrence. The period of quiescence was greatly increased in all that yielded. The true rodent ulcer must not be included in this class. On the other hand a type of case that seems to yield better results locally from the employment of the roentgen ray is the recurrent carcinoma of the breast.

Another point which supports the difference between the action of these two forms of radiation is the effect observed upon the laboratory workers. All suffer from the same hypertrophic and ulcerative conditions, but those resulting from radium and thorium are milder, are of shorter duration and show less tendency to become malignant; in fact, *x*-ray burns have been treated by radium radiation. This may have a very important bearing upon the treatment of such benign growths as fibroids of the uterus, various forms of nevi and other tumors of similar nature. In the treatment of nevi splendid results are often obtained by radiation, but every case must be considered individually, as very often equally good results may be obtained by other procedures, employed under proper conditions.

In conclusion, while the different forms of radiation may in many instances be used in the same conditions with equally good results, there are, however, some cases that appear to be influenced to a greater extent by one of the other forms; this however, may be due to the manner and mode of application rather than a difference in the physiologic action of the individual rays upon tissue.

DISCUSSION.

ON PAPERS OF DRS. LEVIN, KAHLO, BISSELL, PUSEY AND NEWCOMET.

Dr. William H. Cameron, Pittsburgh: This has been a very satisfactory symposium to me, and I speak with some authority, for I feel sure that no one has had more radium for experimental purposes than I, having used amounts ranging from four milligrams to one and a half grams of radium element. Technic is easily acquired and radium burns are of no consequence. For instance, several weeks ago, I had 1010 milligrams of radium element applied for eight hours on a breast case, with no burn whatever.

With the *x*-ray dosage, there is no certainty, unless it be used by a most expert operator. In the application of radium, we always know our dosage and in cases treated locally with radium, the statistics should not be considered unless the dosage is definitely stated. This also applies to the internal administration of radium.

I am sorry that Dr. Pusey was not at the Cleveland meeting of the American Roentgen Ray Society, to hear the discussion on the relative value of the penetrating power of the *x*-ray and radium. I am also sorry that he was not abroad this year to see the work there. The men in England and on the continent seem to be more advanced in radium therapy than those in this country, generally speaking, I mean. I believe that this is due to the fact that many operators, who purchased radium before the date of accurate measurements, did not have anywhere near the amount of radium element supposed to be contained in their applicators.

The expense of radium is not great, considering that there is absolutely no upkeep, that it can be applied twenty-four hours a day, and that its half life period is approximately 2000 years. If anyone using radium is not aware of the actual radium element content of the applicator he is using, or if anyone is contemplating the purchase of radium, he should have it checked up by the United States Bureau of Standards.

Dr. Donald McCaskey, Witmer: It seems to me that this symposium would not be complete without Dr. William L. Clark's principle of desiccation surgery being included. As Dr. Pusey has mentioned, the effect of the radium and the *x*-ray is to kill the protoplasm of the cancerous cell, and it is just this very thing which Clark's work in desiccation treatment has revealed. He has demonstrated to us that unhealthy localized cellular protoplasm can be destroyed permanently without the injury of any surrounding healthy cells. Clark's desiccation principle has developed the fact that there is a zone of temperature produced by a rapidly interrupted current which will completely dry up cancerous and precancerous tissues without any injury whatsoever to the surrounding uninvolved cells. This is the desiccation point, and while I am not an expert in the technical application of this form of treatment or that of the *x*-ray or with radium, yet I have seen the highly beneficial comparative results of desiccation therapy with that of radium and the *x*-ray modes of treatment, and the desiccation results have been of such an obvious economic and simple practical value that this form of treatment deserves a place of no uncertainty in this symposium on radium.

Dr. Jacob Rosenbloom, Pittsburgh: In collaboration with Dr. Cameron and Dr. McCready, I have had an opportunity to study two cases showing the influence of radium upon metabolism. We studied the metabolic effects of massive doses of radium applied externally on a cancer patient and also the effects of intravenous injections in a case of rheumatoid arthritis. Some of the metabolic effects of radium are very difficult to interpret, although very marked. In the case of rheumatoid arthritis the neutral sulphur of the urine was seven per cent. of the total sulphur two days previous to the injection of radium element. Radium was injected in the morning; that afternoon it rose to from thirty to thirty-six per cent; the next day from twenty-five to twenty-six per cent. and on the third day after the injection it lowered to seven per cent. Following an intravenous injection of radium this effect on the neutral sulphur only lasted forty-eight hours. Therefore my advice would be to inject the radium at intervals of seventy-two hours, watching the effect on the urinary neutral sulphur. It only effects the uric acid by increasing leukocytosis.

Dr. G. B. Eusterman, Rochester, Minn.: I should like to raise the question as to the treatment of superficial growths by radium which were aggravated or made worse by the treatment.

Dr. Levin, closing: Is there a difference between the *x*-ray and radium rays? No one knows. I believe the burn is the same. I have seen no difference. I would always get radium burns when I was using lead screening but since starting to use brass screens, I have not had any.

In the treatment of cancer, I would say that the best results are obtained by a correct combination of the various methods of treatment—surgery, diathermy, roentgen and radium therapy.

Dr. Bissell, closing: (Chairman raised the question as to the general condition of the patients having high blood pressure which was reduced by radium.) In all my cases I have noticed no bad effects whatever from the reduction of the high blood pressure by radium. In those patients where the blood pressure is low it did not go down very much. Most patients with low blood pressure already had some disease; three of them above mentioned died with Bright's disease and one of cancer. One patient with a blood pressure of 230 had it reduced to 196 after the use of radium and it went still lower after another smaller dose of the radium. I again wish to say that no harm has resulted from the use of radium in reducing high blood pressure.

DR. NEWCOMET, closing: Dr. Levin has divided his cases of cancer in groups depending upon the locality, rather than the variety of the disease. The pictures shown here contain a number of mouth and vaginal cases, that were restored to health as easily as some cases of superficial epitheliomas. It would appear that metastasis has really more influence upon recovery than the actual site of trouble.

Unfortunately pictures of uterine conditions can not be shown upon the screen, and for that reason no allusion was made to the peculiar control of hemorrhage so often seen in these cases.

In regard to the difference between the action of radium and the roentgen rays, one might first refer to the difference observed between high and low roentgen radiation, and the whole might be illustrated by comparing roentgen radiation to the old-time rifles shooting large bullets at low velocity, while the radium radiation in contrast represents small bullets fired at high velocity, then compare their effect upon a given surface.

Dr. Cameron has certainly expressed the proper note in regard to the measurement and standardization of dosage; the old method of using 300,000 or 1,000,000 units is absolutely useless; and many other terms in use are equally valueless.

There is not the least doubt that diathermy and desiccation have their value in the treatment of cancer, but these methods were not the subject of discussion.

THE DEVELOPMENT OF THE TUBERCULOSIS CAMPAIGN IN PENNSYLVANIA, WITH A DISCUSSION OF ITS PRINCIPLES.

BY ALBERT PHILIP FRANCINE, A.M., M.D.,
Philadelphia.

(Read before the College of Physicians of Philadelphia, June 3, 1914, and reprinted from the Transactions.)

The development of the antituberculosis movement in Pennsylvania began in Philadelphia in the decade following the discovery of the tubercle bacillus in 1882, and may be considered to have passed through three successive phases or stages. The first consisted in pioneer effort to arouse the public and the profession itself to a sense of the importance and extent of this great scourge, its economic position as a destroyer of human life, its relation to domestic and community assets, and the possibility of its eventual control. That epochmaking discovery furnished a scientific basis upon which to proceed, and gave the needed impetus to the propaganda of education which in the two succeeding decades laid the foundation and largely made possible the second stage of the tuberculosis movement, *i. e.*, that of the establishment of institutions for the treatment of tuberculosis by private philanthropy.

In response then to this preaching of tuberculosis in season and out of season a few scattered and disassociated institutions due to private philanthropic effort made their appearance, too few in number and too limited in scope to be in any sense effective in handling the tuberculous sick of the commonwealth, but promising as an indication of aroused public interest. These institutions were free or partly free, but were maintained in some instances with the assistance of state money both for new buildings and running expenses. The majority of them were established in or about Philadelphia, as will be seen from the appended list of institutions or associations dealing with tuberculosis prior to the year 1907, when the State Department of Health took up this work, inaugurating the third stage of the movement, *i. e.*, that of the official campaign.

The first permanent institution[1] was the Protestant Episcopal City Mission in Philadelphia, which began caring for a few advanced consumptives as early as 1876, but became an important factor in the crusade in 1886 when it opened the Home for Consumptives at Chestnut Hill. At the earlier date a few rooms were fitted up in the Mission House, the House of Mercy, at 411 Pine Street, for temporary hospital purposes. Where practicable, however, consumptives were cared for in their own homes, the mission securing for them medical attendance, clothing, food from its diet kitchen, and often paying a member of the patient's household to stay at home and nurse the patient. It also began sending a few cases to the convalescent retreat at Glen Mills in 1884. This, however, was given up upon the opening of the Home for Consumptives at Chestnut Hill.

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[1] The Church Dispensary of Southwark, a small dispensary caring for tuberculosis sufferers, was opened in 1873, and it may be looked upon as the precursor of the interest of the Protestant Episcopal City Mission in tuberculosis. Its work, however, soon became merged in that of the City Mission

The next institution made its appearance fifteen years later, namely, the Rush Hospital for Consumptives in Philadelphia, which opened its dispensary in June, 1891, and its wards in January, 1892, and a Country Branch at Malvern, in June, 1892. It moved to its present handsome building at Thirty-second St. and Lancaster Ave. in January, 1895. The Free Hospital for Poor Consumptives and White Haven Sanatorium Association was organized in Philadelphia in 1895. From 1895 to 1903 it cared for a limited number of advanced consumptives by placing them in the wards of general hospitals at a weekly rate of five dollars, but gave up this work in 1903, having in 1901 opened the White Haven Sanatorium for early cases at White Haven. In 1913 it again took up the care of advanced cases of tuberculosis in the Department for Diseases of the Chest, of the Jefferson Hospital, where it contributes to the support of free beds. In 1898 the Department of Tuberculosis of the Philadelphia General Hospital was opened, to care for the city's indigent consumptives. In 1900 the Lucien Moss Home of the Jewish Hospital, Philadelphia, a free service for consumptives of the Jewish faith, was established. 1903 saw the establishment in Philadelphia of an important and far-reaching institution for the study, treatment, and prevention of tuberculosis, the Henry Phipps Institute at Third and Pine Streets. This institution became a department of the University of Pennsylvania in 1910 and formally opened its splendid new hospital at Seventh and Lombard Streets, in May, 1913.

The first institutions outside of Philadelphia were the Small Camp for Consumptives on South Mountain, opened by the State Department of Forestry in 1903, and the West Mountain Sanatorium at Scranton in the same year, followed by the Grandview Sanatorium at Oil City in 1904. Previous to 1906 Pittsburgh had absolutely no provision for its tuberculous sick, but in that year were established the Tuberculosis League of Pittsburgh and the Pittsburgh City Home and Hospital. The Wilkes-Barre Tuberculosis Dispensary was opened in 1906 and was taken over in 1907 by the State Department of Health, and became the first of the chain of state tuberculosis dispensaries.

The following antituberculosis associations, whose activities were principally educational in character, were organized previous to 1907 as follows: The Pennsylvania Society for the Prevention of Tuberculosis in Philadelphia in 1892; the Scranton Society for the Prevention and Cure of Tuberculosis in 1903; the Antituberculosis Society of Harrisburg and Vicinity in 1905; the Wyoming Valley Society for the Prevention and Treatment of Tuberculosis in 1906.

The above includes all the free or public institutions caring for cases of indigent consumptives in Pennsylvania prior to 1907. In a number of them a minimum charge was made, though there were some free beds in all. Throughout the rest of the cities and towns of the state and in the rural districts there was no provision whatever for the free treatment of consumptives. Thus the total provision for the state consisted in 1907 of 687 hospital beds,[2] free or partly free (of which 522 were in Philadelphia); 319 Sanatorium beds,[3] and 7 tuberculosis dispensaries, 5 in Philadelphia, 1 in Pittsburgh, and 1 in Wilkes-Barre. There died from tuberculosis in Pennsylvania in 1907, 10,825 persons.

It is perfectly apparent how inadequate this armamentarium was against a disease so widespread and so largely confined to the poorer classes, pitiably inadequate not only in regard to treatment of the sick themselves, but in relation to the effective work of prevention by segregation and education in the homes of the poor. It may properly be noted also that it had taken twenty years of the hardest kind of individual effort to get this much—not a very promising outlook for the future at that time.

It was thus not a theory but a distressing fact which confronted the State Department of Health created in 1905 under a law drawn up by Dr. Charles B. Penrose, literally tens of thousands of indigent consumptives uncared for and without the facilities existing to care for them, and correspondingly little real effective work along the broader lines of prevention. The situation was so pressing that when the General Assembly met in 1907 the Commissioner of Health had a big practical question to solve, which under the law he was called upon to solve, not to theorize and temporize about, but to show how suitable measures for prevention and treatment of this great army of consumptives could be supplied most economically, most efficiently, and most expeditiously. The brilliant and original answer came at once—a free tuberculosis dispensary was opened in every county of the state, in the more populous centers more than one, and in a short time there were 114 state dispensaries, so distributed that there could not exist in any corner of the state, however remote, an indigent consumptive who could not receive near at hand free medical supervision for himself and family of the highest standard. One large state sanatorium was at once opened and two others planned, one of which has been open for several years and the other is about to be opened. The efficiency of this system lies in the close relationship between dispensary and sanatorium, so that every indigent consumptive in the state and his family can not only secure treatment at home and in the home, but sanatorium treatment as well; and what is quite as important, is followed up and kept under observation or treatment upon his discharge from the sanatorium.

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[2] In Philadelphia: Home for Consumptives at Chestnut Hill, 70; Rush Hospital, 40; Blockley, 320; Lucien Moss Home, 40; Phipps Institute, 52. In Pittsburgh: Tuberculosis League, 70; City Home and Hospital, 95.

[3] White Haven, 200 of which 100 were free; Rush Country Branch, 40; South Mountain Camp, 20; West Mountain Sanatorium (Scranton), 24; Grandview Sanatorium (Oil City), 35

Within five years the state had treated over 75,000 patients in its dispensaries, housed over 10,000 patients in its sanatoria, and through its trained nurses paid over 600,000 visits into the homes of its patients. The educational and preventive effect of this system alone is simply amazing.

But there were not wanting critics of this system, and to paraphrase an idea in one of the admirable historical papers of Sidney George Fisher, the eloquence of the minority was raised in opposition. It is one thing to be eloquent in your idealism and advocate a theory when you are not responsible for results, and quite another to act for practical ends when you are in power. I want to discuss Pennsylvania's official system with you not only as to its absolute merits, but specifically in relation to conditions existing in Pennsylvania (which I have already outlined) at the time the state took up this work.

The gist of this criticism, which is by no means constructive, is about as follows: It would have been better for the state to have continued to foster by state money both for new buildings and maintenance the few private institutions which were struggling so bravely to carry their unequal burden. It would have been better to encourage the principle of local care, through the establishment by counties or groups of counties, of many small local sanatoria, because it would appear that it was the duty of local communities to care for their own tuberculous sick, and because consumptives would prefer to go to local institutions, where they could be near home and see their relatives and friends. Parenthetically, so far as Pennsylvania is concerned, I may say that I believe this to be a fallacy on every count; except insofar as it applies to far-advanced consumptives, that is, those so sick as to be unsuitable for strictly sanatorium care. It is manifestly the duty of local communities who can afford to do so to provide local hospital care for this group of cases.

STATE AID FOR PRIVATE INSTITUTIONS.

1. The principle of the state granting large subsidies to private institutions for new buildings that they may extend their work, and then being called upon in addition for large subsidies for maintenance that they may keep up this work needs no discussion here. Besides, it must be plain to everybody, (*a*) that under no conditions could private institutions have cared for the tuberculous sick of the commonwealth, and (*b*) that once the state undertook to do this work itself on a gigantic scale it could not dissipate its resources in this way. It was seen that the tuberculosis problem was not a matter for public philanthropy but of public business, as much a part of the state's business as any other great work for the welfare and advancement of its citizens. Private philanthropy could do much to help, but it could not furnish the means, facilities, workers, or correlationship needed in this field. The state was glad of the existence of such admirable institutions (few in number as they were), and welcomed most heartily their coöperation and assistance, but it could no longer continue largely to build and support them, in those instances where this was the case

DIFFICULTY OF GETTING LOCAL COMMUNITIES TO ACT.

2. Next as to possibility of getting local communities, particularly the counties, to act; and let us keep in mind the pressing need there was for definite effective action. It has been pretty conclusively demonstrated that as a rule communities, whether they be counties or towns, have neither the means nor the awakened interest which will lead them to build and maintain even with state aid local sanatoria. In certain states, in order to encourage this plan, a *per capita* grant, usually five dollars a week for each patient in such institutions, is allowed by the Legislature. The law has usually been mandatory, and yet there has been little response and the situation has drifted on unrelieved. It has been freely acknowledged, by those interested in this plan in some other states, that this kind of legislation accomplishes little: the pressure for local institutions must come from within the community itself. Let us see how this applies to dispensaries: A law in Massachusetts of 1911 made it mandatory on every local community of 10,000 or over to open a local tuberculosis dispensary, but there have been very few so established as a result of this law. The secretary of the trustees of Massachusetts' Hospitals for Consumptives has publicly stated that this kind of legislation is a failure. How much more effective is Pennsylvania's centralized system, where at the fiat of one man and his Advisory Board 114 dispensaries were opened in every section of the state!

A special committee of the Massachusetts Legislature appointed to investigate the best means and methods to check the spread of tuberculosis has, after a year's deliberation and consultation with the best experts in the country, recently made among others the following recommendations:—

> "1.The need of a central authority to supervise the control of tuberculosis is apparent, and has been pointed out by commission after commission. This committee recommends a single-headed department. . . .
>
> "5. So many communities complained to this committee of financial inability to build tuberculosis hospitals that it is recommended that the debt limit be extended for this purpose so that the hospital law on the statute books may be complied with.
>
> "6. The State Board of Health should be given power . . . . to provide a state-wide system of visiting nurses."

Certainly the first and last recommendations look as if Massachusetts were anxious to take a leaf from Pennsylvania's system, and the other recommendation endorses my contention of the financial inability of counties to build hospitals and the futility of attempting by statute to compel them to do so.

New Jersey passed a law in 1910 granting counties or groups of counties the right to establish local sanatoria, and this was made mandatory in 1912; but as a result of that law there have been (I am creditably informed) just two county institutions opened with a combined accommodation of forty beds. How much better, because more economic and effective, is a system that gives us 1000 sanatorium beds in a few years and 2000 within seven years!

It is only fair to say that the State of New York has proceeded largely on the principle of local care and with much success, and it is no doubt due to this fact that this system has been so widely exploited. New York has been able to get the local communities to respond—but money seems to be easier obtained in New York and the people seem to move quicker. At any rate the fact remains that New York City has 4500 beds for tuberculosis (1914) as against 589 in Philadelphia[4]—a far greater number proportionately to its population than Philadelphia. In strictly sanatorium beds the state is not proportionately better off than Pennsylvania, though in addition to the State Sanatorium at Ray Brook, twenty counties in New York State have erected or planned to erect local tuberculosis hospitals.

LARGE INSTITUTIONS MORE ECONOMICAL AND EFFICIENT.

3. There is also the question of economy to be considered. It is perfectly apparent that it is more economical to build and administer a sanatorium of 1000 beds than five sanatoria of 200 beds each. This view is generally accepted or at least must be gaining ground, as witness the new Sea View Sanatorium on Staten Island of the New York City Department of Charities

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[4] Blockley, 320; Chestnut Hill, 70: Rush Hospital, 80; Phipps Institute, 24: Jefferson Tuberculosis Department, 40: Lucien Moss Home, 40; Tuberculosis Ward of Episcopal Hospital, 15.

just opened with 1000 beds. Otisville, the sanatorium of the New York City Department of Health, has 600 beds and plans are on foot, I am told, to increase this to 1000.[5]

The plan of the Department of Health of Pennsylvania has been to build a few large institutions rather than many small institutions, because the larger institutions are more economical and can give the patients greater advantages than small sanatoriums can afford. "At Mont Alto Sanatorium, where at present we have 1058 beds, the per capita cost is but $1.15 per day, which figure will likely be reduced. Taking the other charitable institutions in the state handling tuberculosis and figuring out their cost for all classes of patients handled it is more than $1.65 per day. . . . You will readily see that the difference between $1.15 and $1.65 is just fifty cents a day, or a saving to the state of an even $1000 a day on 2000 beds. One thousand dollars a day means $365,000 a year; more than $700,000 for a period of two years. The department's view is that it is wiser to build each sanatorium of sufficient size to reach the maximum economy in management and to save the available funds for other lines of tuberculosis work rather than to fritter away state funds in a large series of small institutions at a much greater cost for maintenance. (Royer.)"

Further, the segregation and care of these cases can be as well accomplished from a public health point of view, in the larger as in the smaller institutions; and even a good deal better if the smaller institutions are continually cramped for means, as is apt to be the case with county institutions.

STANDARD OF MANAGEMENT HIGHER IN STATE INSTITUTIONS.

4. It is presumable that the standard of excellence would vary, nay, must vary in a number of smaller institutions under separate and different management. It is self-evident that whether under the county commissioners or whatever the personnel of the local boards of management the interest and efficiency of the boards would vary in different localities; either for political or other reasons. It does not stretch the imagination unduly as to where to look for and expect the best standard of management, in a local board with individual responsibility merged in a group management, or from one man, a state official, directly and personally responsible to the public, for a public institution in which the whole public is interested and concerned and for which he gets the entire credit or the blame. This point of difference in efficiency of the management of different local hospitals for the care of consumptives has been investigated with results strikingly confirmative of what I say by a committee of the National Association for the Study and Prevention of Tuberculosis. This committee shows that in a relatively large number of the institutions investigated (twenty-five in all), no sputum or urine analyses were made; no reëxaminations of the patients were ever made; no record of the patient's first examination was kept; no record of temperature or nurses' records were kept, and when kept were very incomplete; no record of weight was made except when the patients weighed themselves. In seventeen institutions there were no patients receiving open-air treatment at the time of the inspection. In eleven institutions there were no rules observed in regard to keeping the windows open day and night, and the matter was left more or less to the discretion of the patients, and at the time of the visit the windows of the wards and rooms were tightly closed, etc.

CONSUMPTIVES PREFER TO GO TO DISTANT INSTITUTIONS.

5. Do indigent consumptives object to going to a sanatorium at a distance? Let me answer this from an experience of eight years in the largest tuberculosis dispensary in Philadelphia. They do not; they prefer it. Nearly every consumptive has a desire to "go away" for a cure. It is easier to get them to go to a sanatorium at a distance than to one near at hand. This is psychologically a natural viewpoint, and I have not uncommonly seen patients (in some instances really unsuitable to send away) refuse to go to a near-by institution who were quite willing and anxious to go to Mont Alto or Cresson, where the change of climate and mountain environment appealed to their hope of a new grasp on health. Further, it is difficult to sever local county institutions

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[5] Plans are on foot to increase the accommodation at Blockley by 50 beds.

from connection with pauper institutions and with poor board officials. This again interferes with the willingness of many to go to such institutions.

PATIENTS BETTER CONTENTED AND STAY LONGER AT DISTANT INSTITUTIONS.

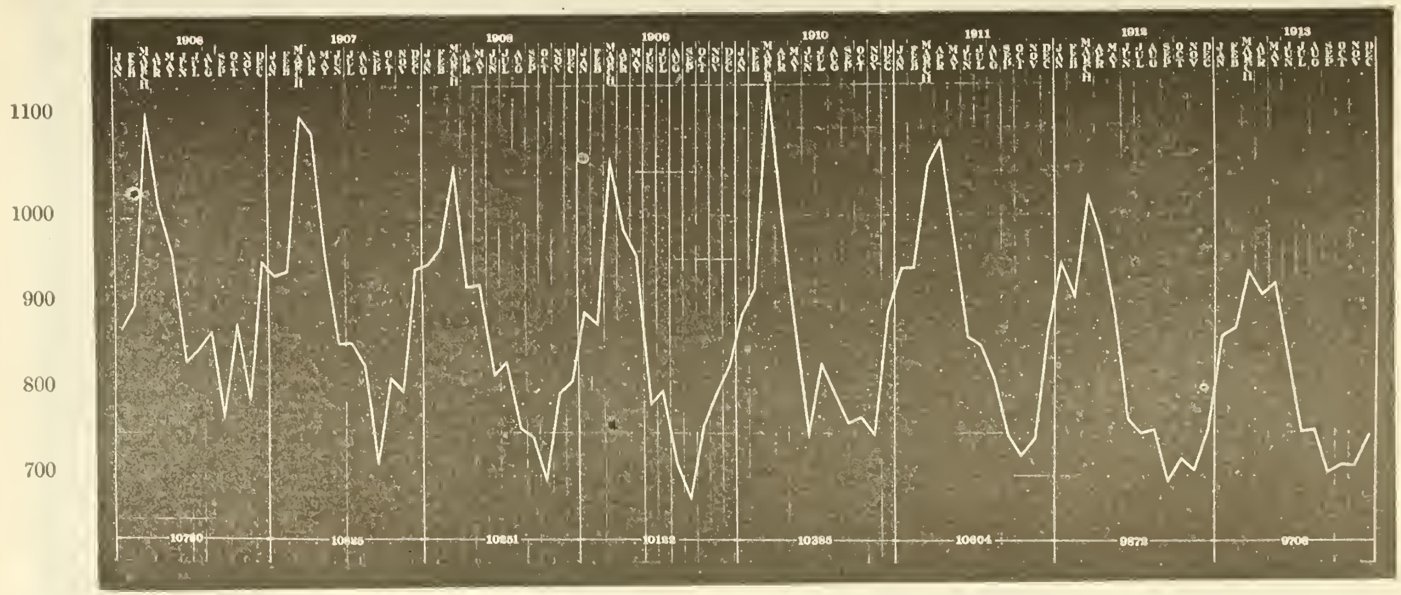
6. Patients who go to a sanatorium at considerable distance from their homes seem better contented and do remain longer than those in nearby institutions. We find that at Mont Alto patients stay in direct relation to the distance from which they come. Those who live farthest away stay the longest. This we have shown to be, as a rule, geometrically true; and as an illustration, in a series of one year's cases, 418 in all (investigated by me), who went to Mont Alto from Philadelphia the average length of stay was seven and a half months, while the average length of stay of all cases for the same year was four and a half months. So striking is this that the medical director of Cresson Sanatorium who has investigated it for his institution, and who finds it equally true, has suggested that patients would stay longer and even better results be obtained if Mont Alto took the cases from the western part of the state and Cresson those from the eastern part of the state.

The above I think are convincing practical arguments against the efficiency of small local sanatoria, even granting, for the sake of argument, that this system would ever have really amounted to anything or could have supplied the immediate need of Pennsylvania. It could never possibly have done so, for in Pennsylvania the counties are too poor. Had Pennsylvania attempted to handle the problem in this disassociated and incomplete manner we could not have had in twenty-five nor in fifty years the facilities we have to-day; and, indeed, we could never have had nor developed the cohesive interrelated and effective system in the close relationship between dispensary and sanatorium that we have to-day.

THE ADVANCED TOXIC CASE SHOULD BE CARED FOR LOCALLY.

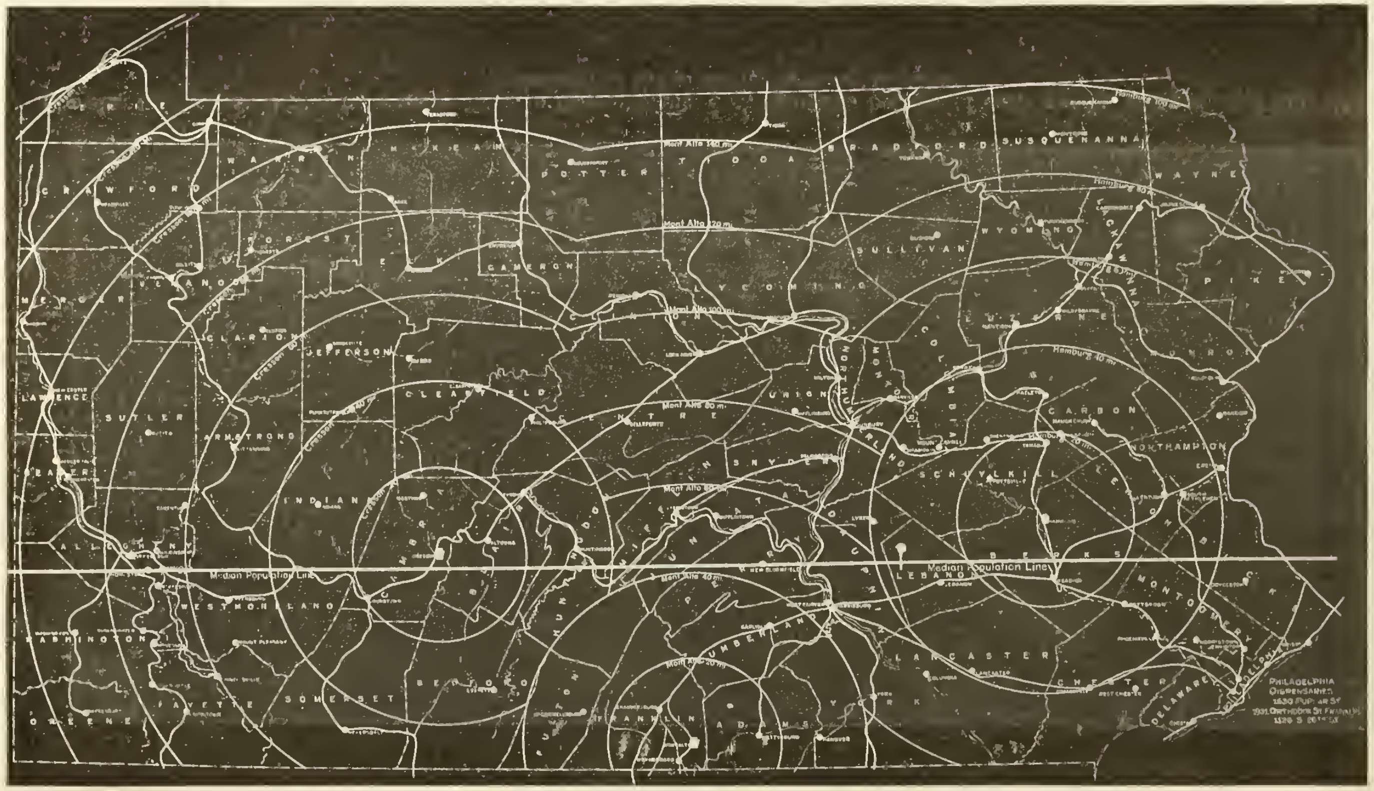
7. There is just one phase of the problem where the principle of local care does hold good for self-evident and practical reasons. Everybody admits and desires that local communities should provide accommodation for their far-advanced toxic consumptives, for those cases that are not suitable for strictly sanatorium care. More than 50 per cent. of the cases sent to the state sanatoria are far-advanced cases, many of them only suitable for infirmary care. The state sanatoria must provide accommodation for these cases, because there is, speaking broadly, no other accommodation for them, but it should not have to take care of this class of cases. Certainly the larger centers of population should have suitable hospitals for these cases, but even they can not be got to supply these. The pressure for such hospitals must come from within, legislative enactment accomplishes little, and there is ample authority under the law for such communities to build these institutions, and it is devoutly to be hoped that they will see their duty and do so. It is not fair to send dying consumptives to Mont Alto and Cresson, and yet there is no other place to send most of them, and many insist on going. The state stands ready to care for all classes of cases in its sanatoria, because there do not exist adequate facilities for the care of the advanced toxic case at home, where he belongs. I wish to particularly emphasize the distinction I make between local hospitals and local sanatoria. I do not believe that counties or groups of counties should be called upon to build local sanatoria, even in theory; and practically the counties in Pennsylvania are much too poor to ever attempt to do so. Many of them have not even almshouses and can not take care of their indigent poor; many of them have no general and no isolation hospital for their contagious diseases and are too poor to provide these. The counties outside the few larger centers of population are very poor, they have practically no money for public improvements or for purposes of philanthropy. They can not even supply themselves with pure water, it is quixotic to ask them to take care of their tuberculous sick. But I do believe that the richer and more populous centers, say all cities of 50,000 or over, could and should provide special tuberculosis hospitals (or special wards in general hospitals if the hospitals can be prevailed on to agree to this) for the local care of their toxic advanced consumptives. But even these larger and richer centers will not provide this evident and pressing need: witness Philadelphia and Pitts-

Chart I. The Fatal Month of March.



Showing total yearly deaths from tuberculosis in Pennsylvania, *i. e.*, figures at bottom of each yearly column, and the striking periodicity of the mortality curve by months.

CHART II.



Dot indicates tuberculosis dispensary. Keystone indicates tuberculosis sanatorium.

Map of Pennsylvania, showing location of state sanatoria and dispensaries; median line of population; and distances in multiples of twenty miles from each of the three sanatoria.

burgh. It is for this reason that the state must stand ready to take care of all classes of consumptives, and it should do so until local provision of the kind indicated is provided—very much on the same principle and for the same reasons that it should take care of the insane, because local communities can not afford to bear the great burden of this expense, and yet numerically the insane are insignificant as compared with the tuberculous.

To sum up, I have shown that previous to 1907 facilities in Pennsylvania for getting close to the people both by way of education and treatment of the sick were wholly inadequate, and further lacked interrelationship or cohesiveness. There were a few individuals working manfully for the advancement of the cause, but they were handicapped by lack of means and official power, misconstruction of motives, and too often by working at cross-purposes. The antituberculosis movement had not yet found itself; it was not on a scientific basis. To express it somewhat fancifully it had begun by the preaching of a holy war, which had been followed by a disorganized crusade; and this in turn was finally followed by the strategic investiture and attack of scientific warfare. The enemy is not yet conquered, but is yielding.

We have now in Pennsylvania, all inside of seven years, since the state itself took up the work, a far-reaching and active campaign of education, state-wide social service, adequate sanatorium beds for strictly sanatorium cases, adequate dispensary service, and the standard of all branches of the service is of the highest; but an essential and important link in this admirable chain forged by the commissioner of health, Dr. Samuel G. Dixon, has not yet been added. It is plainly the duty of local communities of 50,000 or over to forge that link for themselves in providing local care for the far-advanced consumptive, who is unsuitable for strictly sanatorium care. Did there but exist in the more populous centers, strategically placed, twelve fairly large hospitals for this group of cases, for there are twelve cities of the class specified, Pennsylvania would be adequately equipped for this branch of the service, so fundamentally important in the prevention of the spread of infection.

Previous to the law of 1905, Pennsylvania as a state had no registration of births and deaths and no mortality statistics. The accompanying charts explain themselves and show the steady and marked reduction in the death rate from tuberculosis since the state took up this work and the months in which the death rate is highest, and the position of the state sanatoria and state dispensaries.[6]

Chart III. Deaths in Pennsylvania from All Forms of Tuberculosis from 1906 to 1913 Inclusive and the Annual Death Rate.

Year.	Population.	Deaths.	Rate per 100,000.
1906	7,141,766	10,780	150.9
1907	7,279,972	10,825	148.7
1908	7,417,816	10,211	137.8
1909	7,555,841	10,122	133.9
1910	7,693,866	10,285	133.7
1911	7,831,904	10,604	135.2
1912	7,969,904	9,872	123.7
1913	8,107,942	9,706	121.8

DISCUSSION.

Dr. James Tyson, Philadelphia: I think there is no great difference of opinion between Dr. Francine and others of us, who are interested in this subject, upon the statement that the local hospitals are justified only because of the seriousness of the case which can be accommodated and which he says himself it is not worth while to send to a distance. The outdoor life is much better adapted to the cure of consumption. At the same time it is not necessary to have sanatoria so far away from home as was formerly thought. There is occasion for them at home as well as in the more distant locations provided by the state.

Dr. Lawrence F. Flick, Philadelphia: The subject under discussion is important for every community, and of course important for us. It should be looked at from a broad point of view. I am sorry that I can not agree in all particulars with the author of the paper. I can not answer all the points he has raised, but I do wish to say a few words on the principles involved.

First, as to the class of cases. There is no doubt but that what has been done throughout the civilized world for the prevention of tuberculosis proves that the most efficient work is the work for advanced cases. England has almost wiped out its mortality by caring for its advanced cases for nearly one hundred years. It is generally agreed that from cases recovering in sanatoria, we get little reduction in death rate because these cases, in the majority of instances, relapse and become infectious before they die. For preventive purposes, therefore, it would be more economical to take care of our advanced cases first, until we can take care of all advanced cases, and provide for early cases when means is left over for this purpose.

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[6] I wish to acknowledge my indebtedness for the charts and other statistical data concerning the state work to Dr. Samuel G. Dixon, the commissioner of health since the creation of the Department in 1905, and to Dr. B. Franklin Royer, chief medical inspector, for much kind assistance and helpful ideas in the preparation of this paper.

Philadelphia is a good illustration of what can be done by caring for advanced cases. The best kind of tuberculosis work is done here, because the city takes care of advanced cases. As a result, we have a reduction in our death rate since 1882 of over fifty per cent.

The essayist has said that the counties can not afford to take care of their early cases and should provide for their advanced cases. The money, whether used by the state or county, comes from the same people. The people of Philadelphia and Pittsburgh contribute much the larger part of the money used in the tuberculosis campaign, and Philadelphia and Pittsburgh get little return for that money. The proper use of the vast sum of money which is expended in this commonwealth, if expended in the counties and cities, would give better results. If Philadelphia could have the use of the amount which it contributed to the state campaign, it could well take care of its own advanced cases.

A million dollars a year has been expended by the state for the last six years. A careful analysis of the results obtained does not show a justification of the expenditure of that much money. I am convinced that if a more economical method had been followed, such as that by which Philadelphia took care of its advanced cases, the results would be very much better. The campaign in Pennsylvania started with the idea of having local institutions for advanced cases in all the centers near the homes of the patients, and sanatoria for early cases. Had this method been continued, good results would have been obtained.

Dr. Guy Hinsdale, Hot Springs, Va.: I have been somewhat removed from the center of activity of Pennsylvania for the last ten years, but I would not have the occasion pass without reference to the fine work done by the state of Pennsylvania through the Department of Health for the suppression of tuberculosis throughout the state. Any word which would tend to destroy the confidence which the public has in future work ought never to be uttered. The money appropriated by the state is spent in a judicious way. The 122 dispensaries in the state have accomplished much good. It is only by looking after all cases, incipient as well as advanced, that the best work can be done. The fact that we have all these dispensaries in Pennsylvania and so few beds, comparatively speaking, is something that we must take into account. In New York State they really use, proportionately, more money than in the State of Pennsylvania. There will shortly be established a sanatorium at the seaside on Long Island near Jamaica Bay for the treatment of surgical tuberculosis in children. The plans involve a total outlay of $2,500,000. Work to a large amount is also done at Sea Breeze Hospital, Coney Island, under Bellevue and allied hospitals.

At Sea Breeze Hospital heliotherapy has been practiced for the last two years in a modified form according to Rollier's method.

The institution at Atlantic City under Dr. Bennett is also one of the pioneers in this work. More attention is being given to the treatment of tuberculosis by climatic conditions throughout the world than at any previous time and the results of these methods as practiced in the Swiss Alps and on the French coast are very satisfactory.

Dr. Francine, closing: Apropos of Dr. Tyson's remarks, I can not emphasize too strongly the splendid work, in caring for the far-advanced cases, of local institutions like the Rush Hospital, Chestnut Hill, etc., but unfortunately their beds are always full, and we need in Philadelphia a special municipal hospital of at least 300 beds in addition to the present accommodations for tuberculosis at Blockley. We can keep the 320 beds at Blockley filled with the class of people we can get to go there, and fill, as well, an equal number of beds in a special city hospital, not connected with the almshouse. This would go far toward relieving the local situation in Philadelphia.

I will reply only to that part of Dr. Flick's discussion which relates to his statement that the reduction in the mortality for the whole state which my chart shows is due to the reduction in the death rate in Philadelphia brought about by the Philadelphia Hospital caring for the advanced cases.

The Philadelphia Hospital opened 300 beds for consumptives in 1898. The following mortality figures tell their own tale.

Year.	Population.	Number of deaths.	Rate per 100,000.
1898	1,240,225	2590	208.8
1899	1,266,766	2818	222.4
1900	1,293,697	2824	218.3
1901	1,319,228	2787	211.3
1902	1,344,759	2674	198.8
1903	1,370,290	2970	216.7
1904	1,395,821	3224	231.0
1905	1,421,352	2899	204.0
1906	1,446,883	3266	225.7
1907	1,472,414	3261	221.5
1908	1,497,945	3031	202.3
1909	1,523,476	2889	189.6
1910	1,549,008	3007	194.1
1911	1,574,539	3058	194.2
1912	1,600,070	2654	165.9

It will be seen that for the ten years following the opening of that hospital there was no reduction in the death rate in Philadelphia whatever, but, on the contrary, an apparent increase, the rate for 1898 being 208.8 and for 1907, 221.5. And, further, it will be seen that beginning with the year 1909 there was the first consistent and progressive fall, bringing the death rate below 200, until in 1912 it was 165.9. This would seem to me a statistical demonstration of the early effect of the state campaign, certainly the death rate in Philadelphia did not begin to fall until about a year after the state dispensaries and Mont Alto were opened. So that his view and contention are contrary to statistical and demonstrable fact.

In my judgment, therefore, Dr. Hinsdale is right when he states that we should not confine our care to one class of cases to the neglect of the others. It is important to care for the advanced consumptive, but surely if we are to reduce the mortality and prevent new infections we must care for the incipient and moderately advanced case, we must, whenever possible, prevent them becoming the advanced case, and this can only be done by sanatoria. The ambulant patient going about and expectorating tubercle bacilli not only infects his own home but disseminates infection more widely than the dying consumptive confined to his home. Therefore it is neither reasonable nor just to speak of sanatoria as accomplishing little in the campaign of prevention—they play a most important and effective roll, not only in preventing infection but in reducing the mortality. The same is true of dispensaries. I believe that the sanatorium and dispensary are two most effective agents in prevention, if only on account of their tremendous influence by way of reaching the people and educating their patients and those the latter come in contact with. I am not arguing against the usefulness of hospitals for advanced cases; this need was clearly emphasized in my paper, but simply insisting that we should not confine our principal efforts to this group alone.

It seems to me that the most important and fundamental feature of our campaign is that of education. If you can educate the mass of the people, that is, of course, the individual, to consult a doctor or a dispensary for suspicious symptoms or at regular intervals where there is a history of contact, and if you can educate the doctors to examine properly and diagnose tuberculosis in its early stages and send at once all such cases to sanatoriums, you will have gone a long way to the solution of the problem of prevention.

THE PEACE PALACE AT THE HAGUE: A PROPHECY.

There it stands, majestic and beautiful, but its marble halls are silent and deserted. It was built to be the home of the nations, but the nations pass by its ever open doors. It fulfilled the hope of the centuries but that hope seems shattered to the dust. To its dedication all the nations came with their offerings as of old they came to the birth of the Prince of Peace, bringing gold and precious woods and stones, and now they have deserted it. Its walls bear exquisite paintings of the reign of law, whereas all around it reigns fiercest, most savage war. From it was to have gone forth the law, but law has been silenced by the din of lawless strife. There it stands, sublime hall of justice, home of lasting peace, capital of the new world—while justice is forgotten, the angel of peace is trodden under foot, and the nations have turned their faces from that new world which a few months ago seemed dawning.

There the Palace stands—waiting, but no one comes. All over the world men are asking, was it a delusion, a vain dream, an idle hope? Was it not simply a munificent testimony to an unfounded optimism, a fantastic vision, an impossible faith, an impracticable ideal, in the heart of its great donor? This is what many are telling us to-day. From England, Germany and America have recently come three books, one from each land, deriding all those beautiful hopes of which the Palace is eloquent symbol. Not only are the dreams of peace vain, but the ways of peace are undesirable, they say. In all countries the Palace has been the subject of the cartoonist. A favorite picture has been that of the building fallen into ruins, and he who conceived it and reared it, sitting despondent among its broken pillars. "A palace of impossible faith and shattered dreams" men are calling it, "a temple to an ideal too high for man." "I hope Mr. Carnegie is considering some *practical* disposition of his Peace Palace," said an army officer to us in Europe the other day.

To all of which we answer *wait*. To be sure its marble halls are empty, to be sure the nations now rush by its open doors heedless of its call. But its doors are open and we believe that sooner than men now dare dream the tired and weary nations will seek its waiting halls. We believe, that instead of its being the irony of history, as some have said, that it should have been dedicated just before the world repudiated all for which it stands, that "it is the great providence of history that it should have been finished just when it was." There it stands not only as a silent protest to all this folly of the nations, but as the only refuge left them when all else has failed. They are even now beginning to realize that all else has failed and soon they will say in their exhaustion: To whom else shall we go? *Thou only hast the words of eternal peace.*

We believe that the nations will some day, perhaps sooner than we think, run to its portals as a tired and perverse child runs home. For what are the things for which the palace stands? *It stands for the establishment of civilization upon justice rather than brute force.* But all Europe is learning with awful swiftness that civilizations based on force, fear, terror, subjugation, tyranny, might, power crumble into dust at the throwing of a bomb by a fanatic boy. All the might, all the invincible powers of Europe instead of making peace could bring nothing better than this awful chaos of primeval worlds. It is being fast discredited forever even by those who have been its defenders. Every day of Europe is causing thousands to say: The old ways have failed, it is now time to try the new. Not by might, nor by power, but by my

Spirit, saith the Lord of hosts. The old civilization, based on force, has collapsed, the world is learning. It will some day be ready to try the new foundations of *justice, righteousness, international good-will*, disillusioned of force forever. To the palace of justice will the nations come gladly.

The Palace stands *for the character of nations, their fair-dealings with other nations, their friendly disposition, their desire to do justly by all peoples as the best defense and the surety of lasting peace.* Europe for the last fifty years has said armament is the only defense of nations, armament is the only guarantee of peace, armament the only means of securing national stability or growth. So we have seen a civilization grow up fairly based on militarism. The nations have become armed camps. The soldier has been chief among men. All the borders are lined with fortresses which bristle with guns. On the streets and on the ocean guns are everywhere in existence. Guns have been more in evidence than either churches or schools. Every boy has been reared to shoot to kill. All have been taught that by guns must the country be defended must its advance be won, must the peace of Europe be maintained. And just when all this was at its highest, when Europe had become a powder magazine, a boy throws in a match and it explodes. So has the fallacy that armament makes for peace exploded, and the world is seeing it. It is the nemesis of armament. Armament as a means of defense has failed absolutely. No sane man can ever again say "The way to get peace is to prepare for war." Surely Europe has learned this lesson as well as has America. Surely great hosts of people in Europe will be ready to say: "The old way has failed: let us try the new way, the way of The Hague." The Hague idea is that the character of a nation, its reputation for justice and fair dealing, its desire to render help to all other nations is the best defense that it can have, the safest protection with which it can arm itself against attack. To this idea the nations will soon be ready to listen. Indeed it looks as if they might be ready to try any *new* way since the old way has so miserably and utterly failed. To The Hague all nations that *sincerely desire peace* will be willing to go at the close of this war.

The Hague Palace stands for *the substitution of law for war in the settlement of international disputes.* It proclaims *arbitration* as better than *battleships* in securing national rights. It offers to to the world *a supreme court of nations* as a surer means of justice than strife with guns. If the nations are ever going to learn anything out of the terrible experience through which they are now passing it is that war never settles anything except which nation is mightiest in brute force, or which has the better guns, or which has the greater power of endurance. War gives *victories* but it never gives *justice*. After the most appalling loss of life, most overwhelming cost in money and devastated lands, after a set back of industry and civilization a half a century the present conflicting nations will emerge with nothing settled except a temporary predominance. All the old problems, the old rancors (intensified) will be left. Even the victorious ones will be impoverished. A serious conference of the nations for a month, costing a few dollars, would have given infinitely better results. The case between Austria and Servia, had it been sent to The Hague, would probably have been settled to the satisfaction of everybody two months ago and all this unnecessary upheaval of Europe prevented. Force can never settle a question of right or wrong. We believe Europe is learning this lesson in this war, and after the conflict is over the nations will see the foolishness of all this thing as well as the wickedness of it, and turn to The Hague with its court of arbitral justice, with its treaties of arbitration, with its foundation principle, "Law for War," saying: "Why did we not come here in the beginning? Let us be done with these old, outworn futile ways forever, and make this court of justice the field on which all disputes are settled."

The Palace of The Hague stands for internationalism as over against an excessive and exaggerated nationalism. It says to the nations: "Your interests are common and so wrapped up together that each nation serves its own interests best which seeks the interest of all." Twice the nations have come together at The Hague and discussed the welfare common to them all. It was a new thing in the world. It promised a new era for humanity. In the Palace is a beautiful chamber for these future meetings of the world. Here the idea of a cooperative world was growing, here a new patriotism was being born—a world patriotism, a love of humanity as well as love of country. The present war has many of its roots in a narrow patriotism and an exaggerated emphasis of nationality. Each nation has felt that its only hope of a voice in the world was in emphasis of its own individuality. Its patriotism has half consisted of contempt for other peoples. A book has recently been published with quotations from French and German school text-books. When one sees what French boys are taught about Germans and German boys about France he wonders that war between France and Germany is not perennial. In each nation the advance of that nation to a place in the world is emphasized a hundred times more than the general welfare of humanity. Each nation thinks its only development commercially must be at the expense of other nations. Each nation thinks of its own interests as separated entirely from the rest of the world. But the nations are learning through awful lessons that no nation can live to itself alone any more than can any man. The nations have learned that a quarrel between *two* nations means that ten have to pass through purgatory. They are learning that the welfare of one is not through the blind pursuance of a *national* ideal or the seeking of *national* rights. After this war is over they have got to come together—a group of maimed, crippled, impoverished nations—and sit around a table and settle *together* what *each* shall gain or lose.* How much better it would have been if they had held this meeting before the war! They would have accomplished all and even more than they now can gain individually at one millionth the cost. We believe they will see this. We believe that the Hague Conferences will go on, not only as before, but with greatly broadened scope. For we believe that the world is learning that an isolated and excessive nationalism is unworkable and impossible, and is also learning that the world is one.

In the same way the Hague Palace stands for mutual *frankness* and *openness* among nations. It calls them to come together in trust and confidence to openly discuss the common problems of the nations. Everybody has felt that one of the sources of the present war is the mutual distrusts and jealousies among the various European countries. Germany has been suspicious of Russia. France and England had been suspicious of Germany. Germany has distrusted England and England has been suspicious of German motives. Russia has been suspicious of Austrian designs on the Balkans, and so the eternal round of suspicion has gone on. The declarations of any one country have not been believed by the others. No disavowal of flagrant designs has been more than half believed. This suspicion, this fear of attack, this seeing of sinister motive in every word and act, has bred a state of panic and largely led to vast armaments. It is an atmosphere that breeds war—always will breed it. We believe that the nations will some day see the folly of it, and will say, "The Hague idea is better. Let us meet in frequent conferences. Let us be perfectly frank and open in our conversations. Let the ideals of every nation be frankly discussed at these meetings. Let us learn to trust each other as decent men trust each other." Indeed a frequent conference of nations at The Hague would make underhanded projects impossible. They would rise to the surface. But as a matter of fact half of the suspicions are ungrounded. Frequent conferences will make this manifest. We believe that the world will see that The Hague ideal is best and will accept it.

Finally, *The Hague stands for federation of the nations, some form of world organization and a League of Peace.* A federation of the world lies as yet far off. World organization must be a gradual process. But we believe that some form of a League of Peace as originally suggested by Mr. Carnegie at St. Andrew's in 1905 would receive serious consideration by the nations at the close of this war. Each nation declares that it did not desire war. Each nation says that it was dragged into the war. Innocent nations have suffered from the war. A League of Peace would protect all of these protesting nations and perhaps now that they have seen that none of the present forms of diplomacy, none of the existing agencies, not even vast armaments can protect them or save them from the war, they will turn to the League of Peace idea where the great nations as many as will can league themselves together to keep the peace, can all disarm to that point where a minimum extent of armament only is necessary as a police force, and have headquarters, a central bureau at the Peace Palace at The Hague. We believe the nations of Europe will be so sick of war forever that they will readily accept an invitation to gather at the Palace to consider this first step in the federation of the world for peace.

No, do not worry over the fate of the Peace Palace. It is a great thing that it is there. It will yet be the home of the nations. Far back in the middle ages great hordes from the north overran Italy. On one of the hills near Orvieto stood a great monastery. The story goes that the armies swept down upon the monastery and demolished its walls and drove its inhabitants far and wide. Only the altar was left standing and at night after the armies had gone on their way, one solitary monk who had concealed himself among the rocks, one who had loved the place and had great faith, crept forth, and poured oil into the lamp before the altar which had not gone out. Day after day, year after year, he found his way up to the ruined temple and filled the lamp. In after years the monks came back. The chapel rose again in beauty around the altar. The lamp had never once gone out. Year after year it waited burning. Around its eternal fire the new structure rose. The light of The Hague is there, burning. To it the scattered nations will come back and around it rear the new temple of the nations.—F. L., *Christian Work*, Nov. 7, 1914.

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*The meeting of the nations to discuss the terms of peace in the Peace Palace at The Hague is a possibility worthy of careful consideration.

MIXED VACCINE AND PHYLACOGENS.

The unscientific character of mixed vaccines and of the mixed filtered products of a number of vaccines marketed as "Phylacogens" has been especially emphasized and the danger from their indiscriminate use pointed out. Recently John F. Anderson held that the claim that the combination of dead bodies or the filtered products of a number of different bacteria are useful for the treatment of certain diseases with a specific cause, closely approaches quackery. Victor C. Vaughan also has pointed out the danger of the indiscriminate use of bacterial products and observed that untoward results are rarely reported. Physicians who are tempted by the optimistic statements of manufacturers to give complex bacterial products a trial, should remember that the warnings of disinterested scientists are of far more value than uncritical clinical reports put out under commercial auspices. —*Jour. A. M. A.*, Aug. 29, 1914, p. 785.

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ATHENS, NOVEMBER, 1914.

RADIUM.*

That an elemental substance of mother earth should possess the marvelous power of giving off radiant energy for centuries, would be regarded as a wild fancy, were it not a proven fact. The rays emitted by radium and by an excited Crookes' tube are very similar in character although not identical. There is considerable difference of opinion among radiologists and dermatologists as to the comparative quality and therapeutic influence of these two forms of energy. It is confidently affirmed by some and vigorously denied by others that the *x*-rays produce the same effect as radium. While this question may still be considered *sub judice,* there can be no doubt that the action of radium and roentgen rays on living tissues is clearly analogous. Whether one or the other is to be preferred will depend upon a number of considerations. Radium has the advantage of simplicity of application and of adaptability to insertion in various cavities such as the mouth, rectum and vagina, regions not easily accessible to the *x*-rays. It is furthermore claimed that the gamma rays of radium are more penetrating than the *x*-rays; by filtering out the alpha and beta rays one may secure an influence upon deep tissues without injuring the skin.

The disadvantages of radium are its limited field of irradiation and the small quantities of the substance available.

Most of the cutaneous diseases that are benefited by raying are better treated by the roentgen rays than with radium, by reason of the fact that a larger expanse of surface can be subjected to the influence of the former.

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*See symposium on radium, pages 121-139.

Superficial cancer of the skin can be equally well treated by both. The deeper forms are probably better treated with radium. The late Dr. Wickham of Paris and his colleague, Degrais, obtained splendid results with radium in the treatment of "port-wine stains," a condition that can not be treated by any other method with any great success.

In the surgical realm radium finds a not unimportant field of usefulness in cancer of such regions as the mouth, rectum, and vagina, in which the use of the knife is, as a rule, unattended with success. If the growth is circumscribed surgical ablation should be resorted to, followed by the employment of radium. Inoperable cases are, in rare instances, cured by radium or are rendered operable later on. Some authenticated instances of cure of cancer of the uterus are on record, but surgery followed by radium will give a higher percentage of cures than radium alone. Fibroid tumors of the uterus have also been successfully treated with radium; some German clinicians, however, prefer the x-rays, while others use jointly the roentgen rays through the abdominal wall and radium by intrauterine application. Primary surgical removal of operable malignant growths, followed by the employment of radium, the x-rays, or both, is the soundest treatment. The tumor growth is thus ablated *en masse* and the subsequent irradiation helps to destroy the invisible nests of cancer cells in the environment of the tumor.

But radium and other radioactive substances have some therapeutic possibilities which the roentgen rays do not possess. The radium element may be dissolved in water and injected into growths or into the circulation. This method of treatment is still in an experimental stage but it is pregnant with great possibilities.

Radium gas, or, as it is better known, radium emanation, is present in many natural spring waters which are used both internally and for baths. Some springs in Austrian and German spas are powerfully radioactive, and much of the virtue of these waters is with propriety attributed to such action. These waters, both internally and externally, have been proved to be of value in gout, rheumatoid arthritis and rheumatism. One of Germany's foremost pathologists has personally experienced great benefit from radioactive waters and is convinced of their efficacy in his own case. A word of caution should be sounded, however, concerning the claims which are being and will be made for various spring waters. Self-interest will lead to the exploitation of the radioactive waters of particular resorts. Physicians should maintain a scientific reserve until such claims are proved. Little credence should be placed in statements concerning the radioactive properties of bottled spring waters, for the emanation has but a brief light and is soon lost.

In conclusion, it may be said that, while the claims for radium as a remedy against cancer made in magazines and newspapers have been extravagant and often misleading, there are hidden therapeutic possibilities which disinterested scientific endeavor may develop for the benefit of mankind. J. F. S.

MAIGNEN ANTISEPTIC POWDER.

Maigen Antiseptic Powder (The Maignen Institute, Philadelphia) is claimed to be a mixture of calcium hydroxid, sodium carbonate, aluminum sulphate and boric acid, but no statement of the amounts of the several constituents is furnished. Its action depends on the sodium hydroxid which is formed when the powder is treated with water. One gram of the powder was found to yield approximately 0.3 gram of sodium hydroxid. The promiscuous use of this powder is recommended both to physicians and to the public with claims which are extravagant, preposterous and even dangerous. A pamphlet entitled "What is Catarrh" which is clearly intended for the laity, gives directions for the use of Maignen Antiseptic Powder in the "sterilization" of the nose, throat, stomach, lungs, eyes, gums, mouth and genitourinary tract and is a jumble of pseudoscientific nonsense and ridiculous therapeutic claims. A pamphlet entitled "Antiseptic Therapeutics" gives a list of eighty-eight disorders which are reported as having been given the Maignen treatment with success. The dangerous character of the Maignen sterilization propaganda is illustrated by a pamphlet "First Aid to Baby-Sick" and by the statement on the trade package that Maignen Powder may be used "to prevent blood poisoning, lockjaw, hydrophobia and infections diseases.'' The latter is likely to lead the public to place dependence on a sodium hydroxid solution as a means of preventing blood poisoning, lockjaw, hydrophobia and infectious diseases, while the first, if heeded, is bound to lead to the sacrifice of many babes by the credulous, confiding mothers, through neglect of proper treatment. The Council on Pharmacy and Chemistry deserves credit for investigating this nostrum and it is hoped that some of our authorities will take steps to close up the concern. S.

THE WAR AND THE JOURNAL.

In assuming charge of the Journal in 1904, the writer, in an editorial entitled ''It Belongs to You,'' said, ''Its columns are open to any and all members of the several county societies for any article or communication in the interests of the society or the profession, but no article of a personal or controversial nature is accepted.'' It is hoped that the writers of some recent communications regarding the situation in Europe, which have not been accepted by the Journal, will distinguish the difference between their communications and the article printed on a previous page, entitled ''The Peace Palace at The Hague; A Prophecy,'' to which the attention of our readers is respectfully directed.

The editor, advising with a physician regarding the propriety of inserting such articles, was good naturedly answered, ''Well, a medical journal is a medical journal.'' Very true, but is a medical man simply a scientific individual? The family physician must not engage too freely in local matters or in outside occupations, but he should never forget that he is a citizen; nor will it injure his practice if he take an intelligent interest in the general welfare of the community.

The tactful physician will avoid prolonged discussion regarding the present war and should remember the admonition of President Wilson that we are a neutral nation. He should not, however, sink his personality, nor forget that he is an integral part of the state and nation. Was not Macauley right when he wrote, ''It is a bad thing that men should hate each other; but it is far worse that they should contract the habit of cutting one another's throats without hatred''? S.

THE PHYSICIAN'S FAMILY AND THE JOURNAL.

It is encouraging to know that the wives and daughters of our members and subscribers are taking more and more interest in the Journal, and this is one reason why articles not strictly scientific should occasionally find a place in our columns. There is no intention of attempting to make a social or domestic publication of the Journal but the ladies are requested to look over the index and the advertising pages of each number to see if there is not something in it that may prove of interest and possibly serve as a suitable topic for conversation with their husbands or when in company with other physicians. The ladies are invited also to submit correspondence or news items for the Journal. At the Pittsburgh Session a physician's wife asked another lady if she had seen a certain editorial in a recent number, and continued, ''It was so unusual and had a thread in it that was so uplifting that I have cut it out and placed it with my papers where I can read it again.''

Many a physician's wife can help and encourage her husband in his work. She should not be too much in evidence with his patients nor appear to know much about their troubles, but she can aid her husband in studying up some doubtful case, thus helping both doctor and patient, and at the same time increasing her husband's regard for her. I have in mind a young general practicer whose wife quietly shared with him much of his professional anxiety and study, and was the means of enabling him to remove from a country village to a large city, in which he now enjoys a lucrative practice. She was modest and true to both her husband and his patients, and few knew that she took any special interest in those under his professional care. A prominent specialist recently remarked that he takes more comfort in reading and discussing medical and social topics with his daughter, who is well known in social circles, than he does at his club. I have in mind another physician of whom it is told that he seldom removes the wrapper from his copy of the Journal. Will not some friend, in a similar case, persuade the good wife to peep within the covers and see if there may not be found something that it would be good for the doctor to read? S.

A THANKSGIVING INVENTORY.

As the time draws near when the nation will observe a day set apart for thanksgiving, it is fitting that we take a brief inventory of our blessings.

Our crops, which more than anything else decide the weal or woe of the country, have been abundant, bearing out the suggestion "If you tickle the earth with a hoe, it will laugh at you with a harvest." After a season of business depression and unrest there are indications of the dawn of an era of prosperity.

The nation, while saddened by the unspeakable conditions of woe, misery and bloodshed abroad, yet returns thanks that its cosmopolitan peoples are living in peace with each other and with the world. May it be our privilege as a nation to act the part of the angel of mercy to suffering humanity! The vivid realization of the horrors of war is begetting in men a new conception of brotherhood and philanthropy which bids fair to make the days to come golden days in the world's history.

The progress made in the great science of "the conservation of human life" is abundantly attested by the absence of any great ravages of plagues and epidemics, by the multitudinous havens of refuge for the diseased and distressed, by great advances in the science of medicine and surgery, and by the increasing number of specialists who are devoting their lives to the study of the cause and prevention of disease. These are just a few of the more conspicuous items in our inventory of thanksgiving. R. R.

CITY ORDINANCE AGAINST FALSE ADVERTISING.

The City of Easton on July 3, 1914, adopted the following:—

AN ORDINANCE AGAINST FALSE AND MISLEADING ADVERTISING.

Be it ordained by the Council of the City of Easton, Pa., that any person, firm, corporation or association, who with intent to sell or in any wise dispose of merchandise, securities, service or anything offered, directly or indirectly, by such person, firm or association to the public for sale or distribution, or with intent to increase the consumption thereof, or induce the public in any manner to enter into any obligation relating thereto, or to acquire the title thereto, or any interest therein, makes, publishes, disseminates, circulates or places before the public, or causes directly or indirectly to be made, published, disseminated, circulated or placed before the public in this city in any newspaper or other publication sold or offered for sale upon any public street, sidewalk or other public place, or on any sign upon any street, sidewalk or public ground, or in any hand bill or advertisement posted upon any street, sidewalk or public ground, or on any placard, advertisement or hand bill exhibited or carried in any street or public ground, or upon any sidewalk, or on any banner or sign flying across the street or from any house an advertisement of any sort regarding merchandise, securities, service or anything so offered to the public, which advertisement contains assertion, representation or statement which is untrue, deceptive or misleading, shall be fined not less than five ($5.00) dollars nor more than one hundred ($100.00) dollars, or by imprisonment of not less than five (5) days nor more than thirty (30) days.

Last month F. N. Worner of Phoenix, Arizona, who had an office in Easton, advertised extensively Worner's Famous Rattlesnake Oil and Worner's Vis Vitae Tablets. He was arrested, convicted under the above ordinance, fined ten dollars and prohibited from advertising of any kind within the city.

Worner's circulars gave "letters from prominent physicians" in nine different states, all of which were false according to his admission on trial. The circulars also contained numerous testimonials from clergymen, lawyers, officials and prominent women. Our informant does not say whether these testimonials were admittedly false or not, but most of them, judging from their character, evidently were. The testimonials certified to cures of "running sores of thirty years' standing," "deafness," "neuritis," "weak nerves," "kidney trouble," etc. S.

"ABDOMINAL PAIN; ITS SIGNIFICANCE AND DIAGNOSTIC VALUE."

The report of the meeting of the Philadelphia County Medical Society on a subsequent page gives an abstract of a paper with the above heading by Dr. John B. Deaver, which is well worth reading. It is desired to call attention not only to this paper but to the fact that from month to month many valuable thoughts and suggestions may be found in the various reports of the county societies. These reports may not be as exciting or as heartrending as those from the war zone, but they will often prove to be more reliable and more valuable to physicians. Only a small portion of the good things appearing in the Journal receive editorial notice and even the table of contents will not point out half of the points worth reading. **S.**

SECURE NEW MEMBERS NOW.

There are in every county some good physicians who are not members of the county society and this is a good time to ask them to join. There will be found in the advertising pages a blank application for membership which members are requested to cut out and hand to some physician who is not a member. Secure his application and hand it to the secretary of the county society or, better yet, take it to the next meeting of your county society and stand sponsor for the applicant. The membership fee in nearly all the county societies for members joining during November and December covers annual dues for 1915. Legislators and others have some respect for the opinions and requests of county societies that contain practically all the reputable physicians of the county. Are you doing your part as a member of your county society? Remember what Gibbons wrote:—

> "That man may last, but never lives,
> Who much receives, but nothing gives."

S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the October Journal was printed:—

Allegheny County: *New Members*—A. Wray Barkley, Mathew F. Creaven, August H. Eggers, Samuel E. Lyon (by transfer from Fayette County Society), Atlee Mitchell, Harry L. Murphy, Christian Nelson, Nicholas L. Rosenberg, William H. Thompson, Albert A. Wagner, Pittsburgh; Rudolph Hanover, John C. Griffin, McKees Rocks; M. E. Kohn, William H. Leffler, McKeesport; William R. Deemer, Thomas H. Manley, William H. Wood, Tarentum; C. Elmer Mullin, Cambridge Springs (Crawford Co.); Charles J. Steim, Kittanning (Armstrong Co.). *Deaths*—John Wesley Beckett (Howard Univ., Sch. of Med., Washington, D. C., '05) in Pittsburgh, October 20, aged 35; William R. Hamilton (New York Univ., New York City, '64) in Pittsburgh, October 15, from senile debility, aged 86; Arthur C. Magill (Michigan Coll. of Med., Detroit, '85) in Pittsburgh, October 17, aged 52. *Removals*—Joseph W. Anderson from Pittsburgh to 1 North Montgomery St., Ardmore (Montgomery Co.); James W. Knowlton from Tarentum to Premont, Texas; Thomas B. Miller from Moon Run to Butler, N. J.

Bradford County: *New Member*—Gideon W. Durga, LeRaysville.

Bucks County: *Removal*—Walter H. Brown from Richlandtown to 1137 Massachusetts Ave., Brentford Hall, Cambridge, Mass.

Chester County: *Removal*—John H. Johnson from Unionville to Bulger (Washington Co.).

Dauphin County: *New Members*—Gustave A. Dapp, Claude J. B. Flowers, Frank F. D. Reckord, A. L. Shearer, Harrisburg. *Removal*—Howard H. Bell from Mobile, Alabama, to 5031 Maple Ave., St. Louis, Mo.

Delaware County: *New Member*—Robert Kilduffe, Jr., Chester. *Removal*—John B. Roxby from Loganton (Clinton Co.) to Swarthmore.

Erie County: *New Member*—Percy Paul Parsons, Erie.

Fayette County: *Transfer*—Samuel E. Lyon to Allegheny County Society.

Huntingdon County: *New Member*—Gladys Wright Newlin, Huntingdon. *Death*—James P. Brallier (Medico-Chirurgical Coll., Philadelphia, '09) of Alexandria, was instantly killed in an automobile accident, October 18, aged 34.

Indiana County: *Removal*—William H. Nix from Wehrum to Heilwood.

Lancaster County: *Removal*—William J. Steward from Lancaster to Spring City (Chester Co.).

Lawrence County: *Removal*—Arthur P. Smyth from New Castle to 1209 Foster St., Youngstown, Ohio.

Luzerne County: *New Member*—Edward W. Bixby, Wilkes-Barre.

Lycoming County: *New Members*—G. Frank Dandois, Martinsburg (Blair Co.); G. C. Troutman, Williamsport.

McKean County: *Removal*—Charles D. F. O'Hern from Bradford to Tulsa, Okla.

Mercer County: *Removals*—Robert M. Hope from Fredonia to Mercer; Jonathan B. Perrine from Sheakleyville to Wesley (Venango Co.).

Mifflin County: *Removal*—Irving O. Mahr from Newton Hamilton to Loganton (Clinton Co.).

Montgomery County: *Resignation*—Joseph C. Egbert. *Removal*—Clifford H. Arnold from Ardmore to 301 West Seventh St., Chester (Delaware Co.).

Philadelphia County: *New Members*—Ralph Ehrlen Getelman, Thomas B. Bradley, Thomas Grier Miller, Henry A. Newbold, Martin E. Rehfuss, Joseph M. Spellissy, Philadelphia. *Death*—Henry Northam Bryan (Jefferson Med. Coll., '84) in Philadelphia, November 2, after an illness of six months, aged 61; Joseph S. Gibb (Univ. of Pennsylvania, '80) in Philadelphia, recently, aged 55. *Resignations*—W. Scott Keyting (transferred to Salt Lake County Medical Society of Utah); E. Avery Newton (transferred to Los Angeles County Medical Society of California); Evans D. Russell (transferred to Litchfield County Medical Society of Connecticut); Arthur E. Simonis (transferred to Shreveport County Medical Society of Louisiana). *Removals*—Frank G. Bishop from McVeytown (Mifflin Co.) to 1502 Montgomery Ave., Philadelphia; H. Conrad Egly from Jenkintown (Montgomery Co.) to Kirkwood (Lancaster Co.); Charles A. LeGates from Philadelphia to Mt. Pocono (Monroe Co.); Gisela von Poswik from Philadelphia to 512 N. Washington Ave., Scranton (Lackawanna Co.).

WARREN COUNTY: *Resignation*—Mary C. Conant (transferred to Columbia County Medical Society of New York State).

WASHINGTON COUNTY: *New Member*—Samuel A. Ruben, Washington.

Present membership 6592. S.

PAYMENT OF PER CAPITA ASSESSMENT.

The per capita assessment for the period from September 1, 1914, to January 1, 1916, has been received from component county societies as follows:—

Oct. 31,	Northumberland	1-2	1-2	$ 5.50
	Allegheny	1-36	3-38	99.00
	Bradford	1-3	39-41	8.25
Nov. 5,	Dauphin	1-12	42-53	33.00
	Northumberland	3-10	54-61	22.00
Nov. 6,	Mifflin	1-9	62-70	24.75
Nov. 9,	Bucks	1-12	71-82	33.00
Nov. 10,	Dauphin	13	83	2.75
Nov. 11,	Clearfield	1	84	2.75
	Mifflin	10-11	85-86	5.50
	Lehigh	1-5	87-91	13.75
Nov. 13,	Bucks	13-27	92-105	38.50
Nov. 14,	Allegheny	37-39	106-108	8.25
	Washington	1-36	109-144	100.00
Nov. 16,	Mifflin	12	145	2.75
	McKean	1-5	146-150	13.75
Nov. 18,	Mifflin	13	151	2.75
Nov. 19,	Clearfield	2-15	152-165	38.50
Nov. 20,	Lehigh	6	166	2.75

C. L. STEVENS, Secretary.

STATE NEWS ITEMS.

MARRIED.

Dr. George K. Hays and Miss Ethel Herron, both of Monongahela, October 15.

Dr. Alma Read, Osceola Mills, and Mr. Charles Derrick, in Bellwood, September 27.

Dr. Paul C. Boord, Maryd, and Miss Frances McLaughlin, in Pottstown, October 7.

Dr. Larry Dodd Sargent and Miss Naomi Linton, both of Washington, October 15.

Dr. Peter P. Mayock and Miss Elizabeth Smoulter, both of Nanticoke, October 15.

Dr. Irving R. Schoonmaker and Mrs. Arvilla Hiddens, both of Philadelphia, August 5.

Dr. Richard Dale Hopkinson and Miss Florence Adele Savage, both of Philadelphia, November 4.

Dr. William J. Shenberger, New Bridgeville, and Miss Ida Bell Smith, Windsor, in Baltimore, October 1.

Dr. Thomas Lamer Williams, Mt. Carmel, and Miss Ellen MacFayden, Newark, N. J., in New York City, October 6.

Dr. Charles Coro Gans, Point Marion, and Chelsea Trax Carroll, Uniontown, at Jacksonville, Fla., September 15.

DIED.

Dr. Edward F. Gifford (Cleveland Med. Coll., '93) in Erie, October 23, aged 48.

Dr. Cyrus Jay Seltzer (Univ. of Pennsylvania '81) in Lebanon, October 23, from heart disease, aged 59.

Dr. William W. Johnson (Univ. of Pennsylvania, '65) in Chester, October 21, from heart disease, aged 67.

Dr. Robert K. Cherry (Leonard School of Med., Raleigh, N. C., '06) in Philadelphia, October 29, from pneumonia, aged 34.

Dr. Walter D. Green (Univ. of Pennsylvania, '86) Philadelphia, was struck and killed by a train near Bellemead, N. J., October 25, aged 52.

Dr. James Fry Armour (New York Univ., New York City, '67) in Williamsburg, September 25, from acute dilatation of the heart, aged 71.

BORN.

To Dr. and Mrs. W. A. Toland, Pottstown, October 16, a daughter.

ITEMS.

Dr. Henry K. Gaskill has been appointed assistant professor of dermatology in Jefferson Medical College.

Dr. Elwood R. Kirby has been appointed chief and consulting surgeon to the Masonic Home at Elizabethtown.

Dr. John D. Tucker, New Castle, has been elected by city school board school inspector at a salary of $1000.00 per year.

Dr. Edward A. McLane, chief resident physician at the Scranton State Hospital, has resigned to take up private practice in Scranton.

Dr. Robert G. Boak, New Castle, was seriously injured in a collision of his automobile with the upright supports of a railroad crossing.

Dr. J. William White received an honorary fellowship in the American College of Surgeons, at its third annual meeting in Washington.

Dr. Daniel P. Maddux, Chester, member of Bureau of Education and Licensure, has been made a fellow of the American College of Surgeons.

Major General Leonard Wood, U. S. Army, was honor guest at a reception given by the Medical Club of Philadelphia, at the Bellevue Stratford, October 16.

Dr. William C. White, medical director of the Tuberculosis League of Pittsburgh, has been elected president of the First North Atlantic Tuberculosis Conference.

Hog Cholera. A newspaper clipping of November 15 says that more than 175 hogs have died in Point Township, Northumberland County, during the last few weeks.

Dr. Thomas A. Benbow, an Australian, has resigned as house physician of Jefferson Hospital and has started for England to offer his services to the Royal Army Medical Corps.

Dr. F. D. Patterson, director of the department of sanitation and accident prevention of the J. G. Brill Car Works Company, is chairman of "Safety First" Commission named by Director of Public Safety Porter to safeguard the public on the streets of Philadelphia. Dr. Edward Martin, a member of the Board of Education, is also one of the members.

Dr. William Penn Vail was elected by the Philadelphia County Medical Society to fill the unexpired term of assistant secretary and reporter *vice* Dr. Arthur H. Hopkins, resigned.

Dr. William L. Estes, South Bethlehem, delivered the address at the twelfth annual commencement of the Robert Packer Hospital Training School for Nurses, Sayre, on October 27.

Dr. William Lynott, Scranton, has been appointed a member of the medical and specialist staff of the Federal Bureau of Mines and Mining. He will have charge of the eye division of the medical bureau.

Dr. Robert N. Willson will give a series of demonstrations in diseases of the heart and lungs in the amphitheater of the Philadelphia General Hospital, from 5 to 6 each Friday. Physicians and undergraduate students are cordially invited.

Dr. Adolph Ernest Kraemer, a young physician who was engaged in research work in Philadelphia, and who returned to Germany several months ago to visit relatives, was killed September 5, in the battle of the Marne, while serving as an artillery officer.

Dr. J. William White, emeritus professor of surgery at the University of Pennsylvania, and Dr. R. Tait McKenzie, head of the department of physical education, have volunteered their professional services during the war to the British government.

Typhoid at Lehigh Traced. The investigation of the State Health Department of the recent typhoid epidemic at Lehigh University, has traced the source of infection to a kitchen employee, who, though long since recovered from an attack of typhoid, still carried the germs.

Bequests to Hospitals. By the will of the late Robert H. Crozer, Upland, $200,000 is bequeathed in trust to maintain a hospital in Upland or Chester, to be conducted under the "allopathic" system; $5000 in trust to the Woman's Hospital of Philadelphia to maintain a free bed and $5000 in trust for the maintenance of a free bed in the Philadelphia Home for Incurables.

The Doctor's Fund Committee is raising money to send volunteer surgeons and physicians to aid in the care of the wounded and destitute abroad. All physicians are requested to contribute $1.00 or more and send it to Mrs. Alfred Reginald Allen, treasurer, 2013 Spruce Street, Philadelphia. Mrs. John B. Deaver is chairman of the committee and Mrs. Francis R. Packard, secretary.

Asks United States to Aid Hospital in Paris. Mrs. George Wharton Pepper, Philadelphia, on November 4 received a telegram from Dr. Joseph Blake of the American Hospital, Paris, in which he urgently asks for the following supplies: (1) Surgical gauze; (2) rubber goods, such as ice bags, hot-water bags, gloves, bedpans, sheeting, syringes, rubber tubing, etc.; (3) woolen goods, such as underclothes, pajamas, abdominal belts, merino undershirts and drawers; (4) yarn or knitted goods, such as socks, mufflers, scarfs, etc. All such articles either singly or in bulk may be sent to 1428 Walnut St., Philadelphia, addressed either to Mrs. George Wharton Pepper or to Dr. J. William White. Contributions of money towards the purchase of these supplies may be sent to Mr. Effingham B. Morris, Girard Trust Bldg., Philadelphia.

Board of Health Cultures and Serums. The Philadelphia Bureau of Health desires diagnostic cultures to be taken of all cases suspicious of diphtheria. If not done by the attending physician and he so desires, the culture will be taken by the inspector. All inmates of the house are cultured by the inspector on his first visit. Upon the termination of all cases of diphtheria, the physician or the inspector, upon his request, will take cultures until two successive negative ones have been obtained from nose and throat. The nurse or attendant and all contacts in the house are cultured upon the termination of the case. The inspector will, upon request of the physician, administer the first curative dose of antitoxin; further treatments must be given by the physician if the case remains at home. Supplies of antitoxin may be obtained at Room No. 716, City Hall, or at any police station house. The inspector will offer his services to immunize the entire family, even if not requested by the attending physician, and will also immunize all or such inmates designated by the physician. Station houses also supply the outfits for Widal tests for typhoid fever. Typhoid prophylactic, Wassermann outfits and vaccine virus may be obtained only at City Hall.

Award of the Alvarenga Prize. The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $250, will be made on July 14, 1915, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but can not have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the College on or before May 1, 1915. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1914 has been awarded to Dr. H. B. Sheffield, New York, N. Y., for his essay entitled: "Idiocy and Allied Mental Deficiencies in Infancy and Early Childhood."

New Powerful X-Ray Tube. A substitute for radium in many forms of therapeutic treatments has been found in the new hydrogen *x*-ray tube (according to its inventors, H. Clyde Snook and Edwin W. Kelly) exhibited Saturday evening, November 7, at a joint meeting of the New York and Philadelphia Roentgen Societies, at the Hotel Adelphia. An air jacket, similar to a water jacket on an engine, keeps the tube cool and prevents the glass and electrodes from heating. Aside from its enormously increased power of penetration over the ordinary article and its prospective value in treatment of disease, the discovery of the air-cooled hydrogen tube opens for the *x*-ray a commercial and practical field hitherto closed. The *x*-ray can be used in sterilizing and freeing many articles from bacteria, but because of the short life of the ordinary tube its use has been limited principally to medical work. Even in this, however, the use of high power tubes has been handicapped. The new tube, which lasts indefinitely and may be run for days at a time under high power, is adaptable to many kinds of commercial work, such as the purifying of cereals and foodstuffs. After an address by Prof. J. S. Shearer, of Cornell University, on "Some Measurements Made with the Coolidge Tube," the New York society was entertained at a banquet and smoker.

Epidemiologist, Male. The United States Civil Service Commission announces an open competitive examination for epidemiologist, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Public Health Service for service in the field, at a salary of $4000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The duties of this position will be to make laboratory and field investigations of the diseases of man in relation to prevalence, causation and methods of control, and to conduct field studies of public health matters. It is desired to secure persons thoroughly qualified in laboratory and field research work in epidemiology, and to organize and conduct such work in the field. Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated: (1) Education, 25; (2) experience and fitness, 50; (3) publications, 25; total wights 100. Graduation with an A.B. or B.S. degree from a college or university of recognized standing, and graduation with an M.D. degree from a medical school of recognized standing, and at least five years' experience in epidemiological research, including field studies and laboratory technic, and at least five years' public health service under Federal, state, or municipal authorities, are prerequisites for consideration for this position. Experience in epidemiological research and experience in public health service may be concurrent. Persons who meet the requirements and desire this examination should at once apply for Forms 304 and 2095, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C. No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington prior to the hour of closing business on December 15, 1914.

GENERAL NEWS ITEMS.

Dr. George Livingston Peabody died suddenly from heart disease at his home in Newport, R. I., October 30, aged 64.

Dr. John Shrady, brother of the late Dr. George F. Shrady, died at his home in Stamford, Conn., November 11, aged 85.

Spain Has Offered France Hospital Treatment for thirty thousand wounded soldiers. Madrid can accommodate six thousand.

The Nevada State Medical Association at its meeting in October selected the *California State Journal of Medicine* as its official organ.

Chloroform Donations. A donation of $4000 worth of chloroform has been received by the British Red Cross from an American donor.

Oxypathor Manager Convicted. E. L. Moses, Buffalo, N. Y., was found guilty on November 7, at Rutland, Vermont, of using the U. S. mails to defraud.

American Hospital in Petrograd. The American colony in Petrograd has established a small hospital there and the American Red Cross is arranging to send it absorbent cotton, linens, blankets, etc.

American Red Cross Expedition in Berlin Of the seven expeditions sent out by the American Red Cross, the one destined for Germany had arrived at Berlin by October 18, and passed on to the eastern seat of war.

Dining Cars Placed at the Service of the Wounded. The company owning the dining car service in Germany has placed all their cars at the service of the troops so that the wounded can be given warm food en route.

Council on Pharmacy and Chemistry. Since July 1, the following articles have been accepted for inclusion in New and Nonofficial Remedies. Antirabic vaccine, Pasteur Institute of St. Louis; Radium Bromid, Standard Chemical Company.

Dr. Simon Flexner, pathologist and bacteriologist of the Rockefeller Foundation, arrived at the Chicago stock yards, November 12, and immediately began an investigation, the purpose of which is to isolate the germ of the foot and mouth disease and discover a serum for its prevention.

Dr. Frederick Baetjer of John Hopkins Hospital is a patient at the Hospital where he was operated upon for the forty-sixth time. The glands of the axilla, which were affected by the action of the *x*-ray were removed. Dr. Baetjer has also lost an eye and four fingers as a result of actinographic work.

An All-Night Drug Store. The physicians of Trenton, N. J., are advocating an amendment to the pharmacy law, which will require at least one druggist in each city either to keep open all night or have a man on the premises who can get up quickly on call, compound prescriptions and deliver the same.

Goldenseal Under Cultivation is the subject of Farmers' Bulletin 613. The price of the roots has increased from 78 cents in 1890 to $4.00 at the present time. Physicians wishing some outside hobby for recreation and fair profit will do well to send to the U. S. Department of Agriculture for the bulletin.

French Physicians at Erfurt. Seven French physicians are said to be at work in the prisoners' camp at Erfurt, Germany, but in accordance with the Geneva convention, they are not regarded as prisoners of war but are lodged in the barracks and allowed to go about at will. They still wear their French uniforms with the Red Cross band on the arm.

Death of Professor Konig in the Field. The *Med. Klinik* brings word that the professor of surgery at the University of Marburg, Friedrich König, was killed recently while attending to the wounded on one of the battlefields at the eastern seat of war. He was the son of the late Professor Franz König of Berlin, and entered on the practice of his profession in 1890.

Patriotic Physicians of England. In many places in England the medical men have held meetings and adopted resolutions undertaking to safeguard the interests of their professional colleagues who are called on to leave their practices in the service of their country and also agreeing to take up the medical duties of their associates for the sole benefit of the absentees.

Deserved Honor to Dr. Sheldon. The physicians of Wisconsin, on the last day of the state society meeting in October, made a formal presentation to Dr. Charles S. Sheldon, Madison, retiring president and for many years secretary of the society. The address was made by Dr. Gilbert E Seaman, Milwaukee, who expressed the love and reverence in which Dr. Sheldon is held in the medical profession of the state

The Philadelphia North American, usually a clean newspaper, has been advertising Eckmans Alterative, a "consumption cure," and *The Journal of the A. M. A.*, November 7, page 1686, sums up the case as follows: (1) It is sold as a cure for consumption, which it is not. In other words, it is a fraud. (2) It is sold under the claim that it contains no "narcotics or habit-forming drugs." Alcohol is both narcotic and habit-forming. (3) Its purchase means the use of money that frequently can be ill afforded and which should go into wholesome food and rational treatment. (4) Its use means that the consumptive is led to rely on a perfectly useless nostrum and to neglect the very things which offer him the only hope. (5) To claim that, because lime is sometimes used in the treatment of tuberculosis, therefore a preparation containing lime is a cure for consumption, is as illogical as it is cruel.

BULLETIN EXCERPTS.

Bulletin, Crawford.

The House of Delegates at Pittsburgh adopted a new Constitution and By-Laws in which there are some important changes and each member of the county society is requested to carefully read the new Constitution and By-Laws as they appear in the October issue of the State Journal. A model Constitution and By-Laws for component county societies was also adopted. The county societies are "urged to adopt at their earliest opportunity its main features so that there may be as much uniformity and as little friction as possible in the work of the several county societies."

The Constitution and By-Laws of the Crawford County Society are sadly in need of revision. Is this not our opportunity? Why not have a committee to do this work at once and have it done before the beginning of another year.

Bulletin, Lawrence.

Why Can't Every Fellow who has a license to practice try to keep up to a high standard? Keep up the prices for private work and refuse to do any work of a public nature unless the salary is such as will meet with the approval of the profession. Price cutting is undignified and unprofessional, and cheap work is done only by cheap men.

COMMUNICATION.

ACCIDENTS DUE TO EPILEPTICS BEING UNSUITABLY EMPLOYED.

To the Editor: I am preparing a paper on "Accidents Due to Epileptics Being Unsuitably Employed," or being in unsuitable places at the time of seizure; to be illustrated by photographs of patients showing resultant mutilations.

Will you kindly put me in touch through the pages of the Pennsylvania State Medical Journal with *physicians* having had such patients, who would be willing to send photographs showing results of such accidents. The physicians would get full credit, names of patients would not be mentioned, and photographs would be returned.

I feel the importance of such a paper of warning on account of the number of crippled epileptics, often preventable cases too, who frequent my consulting rooms.

Thanking you in advance for courtesy, I am,

Yours sincerely,
Matthew Woods,
1402 Spruce Street, Philadelphia, Pa.

SOCIETIES.

PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Special meeting June 25, Dr. George M. Coates presiding.

Two Very Interesting Cases of Foreign Bodies in the Bronchi Removed by the Bronchoscope. Dr. Shurley, Detroit (by invitation): Many of our so-called foreign bodies are false alarms. Patients develop neurasthenic signs of regular case. One patient had a persistent cough of long standing, cough and expectoration being characteristic of incipient tuberculosis, and had been treated by numerous physicians, without relief or proper diagnosis. Most peculiar characteristic was smell of rubber perceptible at time of coughing. A radioscopic picture located a foreign body in right main bronchus. History was elicited of a tooth extracted some time previously and the breaking off of a piece of rubber plate of a false set. Patient was admitted to hospital and etherized; bronchoscope passed and rubber found, but before extraction could be done was lost and could not be located again, patient coming out of anesthesia coughed it up. A good plan which must be kept in mind is when to stop with bronchoscopic examination. This case illustrated that patients do not always know what is the matter and all with coughs of long standing should have an *x*-ray taken. Second case, that of a pin imbedded in second bifurcation of left bronchus of child, was illustrated with plates. There is great difficulty in locating pin in bronchus, it sometimes being impossible; but external operation should never be done until bronchoscopic examination has been most thorough. Third case was that of a lady twenty-two years old, who had several teeth extracted under gas. Dentist while working fast in extracting teeth, while patient was under nitrous oxid, dropped tooth off forceps and it was inhaled into bronchi. Bronchoscope was passed and tooth extracted.

A Case of Bilateral Recurrent Laryngeal Paralysis. Dr. Antonie P. Voislawsky, New York, (by invitation): E. W., colored, female, aged seventeen, single, was admitted to St. Luke's Hospital, New York City, March 7, 1914. Patient's chief complaint was difficulty in breathing. Present illness began fifteen months before when she was operated upon for goiter. After wound had healed and she had left hospital she noticed difficulty in breathing, and for some time attacks lasted an hour or more. When talking she was obliged to stop and take a forced inspiration before continuing. Personal or past history is unimportant. Physical examination showed a girl fairly well nourished, who did not appear acutely or severely ill; some difficulty in breathing and talking, inspiratory efforts labored; articulation of words good; when asleep had a noisy respiratory stridor; eyes, ears, mouth and neck were normal; lungs, resonance good; inspiration prolonged and accompanied at times by an inspiratory moan; abdomen and extremities negative. Laryngeal: Vocal cords appeared reddened, and separated slightly on inspiration, but in rest of breathing they were in close apposition. There was no voluntary motion of muscles supplied by the recurrent laryngeal. Blood, urine, blood pressure, Wassermann and x-ray all negative. Pulse 56, respiration 44. Three days after admission we were compelled to isolate patient as her crowing while asleep kept rest of patients awake. Intubation at bed time relieved dyspnea and stopped crowing. Electricity, both galvanic and foradic were administered, but without effect. March 27, she was brought to operating room, larynx cocainized and a Jackson pharyngoscope introduced and with a cordes punch left vocal cord excised. For several days subsequently she was intubated and, after wound healed, discharged from hospital. Breathing was made easier, there was improvement in talking and crowing was replaced by an ordinary snore. At the present time there is a white band of scar tissue where left cord was excised, and, strange to say, right cord and band approximate.

A New Test for Labyrinthine Disease. Dr. Emerson of Boston (by invitation): The best classification of specific disease of labyrinth with which writer is acquainted is that given by Kerrison in his late textbook. Here clinical manifestations of syphilis of labyrinth are divided into four classes. First is a congenital type seen in its most characteristic and easily recognized form in children exhibiting other stigmata of the disease. Aural lesion is usually bilateral, though one ear may be and usually is more seriously impaired than other. Examination of ears may reveal physically normal drum membranes, or physical signs of middle-ear suppuration may render syphilitic character of labyrinthine affection less easy to recognize. Deafness is of distinctly labyrinth type and usually of advanced grade. Examination of child shows in a certain percentage of cases characteristic notched condition of teeth (Hutchinson's). According to Fraser, this defect occurs in fifty per cent. of cases. Interstitial keratitis is defect occasionally met with, as also are destructive lesions (defects) of soft and hard palate. With or without these defects, child not infrequently presents a stunted, prematurely old appearance which is more or less characteristic of these little unfortunates. The above abnormalities mark the most pronounced and therefore conspicuous form of congenital syphilis. There are many cases where child does not exhibit such obvious stigmata, cases in which a thorough physical examination, a careful analysis of family history, and resort to Wassermann test may be necessary to establish a correct diagnosis. Prognosis as far as auditory function is concerned is hopeless.

Second variety of syphilitic labyrinthitis is that which occasionally complicates acquired form of the disease in adults. It develops most frequently in late secondary or in tertiary stage, rarely in primary stage. It is characterized clinically by very sudden and usually very extreme deafness in one or both ears. That vestibular apparatus is also involved in a very large percentage of cases is shown by frequent evidences of disturbed equilibrium, *e. g.*, nystagmus, vertigo, static ataxia, etc. When lesion is unilateral and completely annuls function of affected vestibular mechanism, onset is necessarily characterized by all usual phenomena of vestibular irritation or excitation. When both labyrinths are simultaneously paralyzed, patient exhibits the type of vertigo and ataxia characteristic of vestibular paralysis. The writer has recorded history of such a case in which patient was absolutely deaf in both ears, and both vestibular mechanisms were absolutely nonirritable by either rotation or the caloric test.

Clinical features of these cases usually leave in doubt question as to weather membranous labyrinth or eighth nerve is structure primarily attacked. Involvement of other cranial nerves and simultaneous and equal disturbances of both cochlear and vestibular functions would point to nerve as structure primarily attacked; while escape of other cranial nerves plus unequal disturbance of two branches of eighth nerve would point rather strongly to a direct invasion of labyrinth.

Aside from very characteristic onset of attack in a person whose drum membrane may show no morbid changes, there are usually other evidences of disease in cuticular eruptions, mucous patches, etc., which, in conjunction with history of an initial lesion, may leave no doubt as to syphilitic origin of labyrinthine disorder. Though necessarily causing great anxiety, prognosis is more favorable than any other form of syphilitic labyrinthitis.

Another clinical variety of the disease, pathologic basis of which is not always so easily determined, is found in adults who have suffered from chronic constitutional syphilis over a period of years. Drum membranes may or may not show evidences of tympanic disease, which, if present, may represent an intercurrent and pathological independent lesion. Such a patient frequently gives a history of occasional attacks of vertigo of more or less pronounced type, or such attacks, having belonged to an earlier stage of disease, may have ceased to annoy him. Diagnosis depends chiefly upon labyrinthine character of deafness (*i. e.*, diminished bone conduction, negative Rinné, loss of hearing for highest musical tone) plus constitutional evidences of the disease. Very frequently pharynx and nasal cavities show cicatrices and perforations representing typical lesions of an earlier stage.

Naturally history of such a patient might be expected to furnish data of considerable diagnostic significance. To other manifestations of disease

Wassermann test contributes strongest corroborative evidence.

Lesion from which it is in some cases most difficult to differentiate chronic syphilitic labyrinthitis is that form of otosclerosis which involves not only labyrinthine capsule but also membranous cochlea. Between these two conditions a positive differentiation is not in all cases possible. History of sudden development of deafness, coming on in late secondary or in tertiary stage of acquired syphilis, would go far toward establishing syphilitic character of the labyrinthine lesion.

Treatment in these cases is treatment of chronic syphilis. Prognosis, so far as any marked improvement of hearing is concerned, is unfavorable.

Fourth clinical type is found in patients who are victims of constitutional syphilis of long standing, and whose ears exhibit physical characteristics of a middle-ear suppuration (usually of offensive type) and functional reactions of labyrinthine disease. Syphilitic nature of labyrinthine lesion is usually an hypothesis not susceptible of definite proof. It is an hypothesis of very practical importance, for improvement, either functional or of concomitant suppurative lesion of midde ear, is not likely to result from any plan of local treatment not reinforced by active measures to eradicate constitutional disease.

Treatment: There is no manifestation of syphilis which calls more urgently for vigorous efforts to eradicate systematic poison than syphilitic labyrinthitis. Question of treatment resolves itself into a comparison of the few drugs of known value, and best methods of administering them. More important phases of this subject are discussed in chapter devoted to use of salvarsan in aural therapy.

This classification coincides with previous experience of writer. Use of the Wassermann, Noguchi and provocative tests have shown us that many more chronic morbid processes involving bone and nerve tissue than we have supposed, have syphilis as underlying cause. While in past we have in some cases of labyrinthitis suspected that specific disease was underlying cause, yet these cases were for most part accompanied by pronounced and sudden deafness. A careful history usually elicited fact that vertigo, nystagmus, rheumatism, or characteristic headaches, either one or all, had at some time existed. This suspicion of venereal infection was often further confirmed by physical examination.

It is to laboratory that we are indebted for means to determine definitely that many cases of specific labyrinthitis may develop slowly without the stormy clinical phenomena usually associated with our previous conception of involvement of inner ear from lues and presumably vestibular irritation. It is purpose of this short paper to submit a hearing test a diagnostic guide to specific labyrinthitis. At time of study of ten cases of labyrinthitis writer had never seen the following statements advanced as of significance in determining this specific origin. Given a bilateral affection with marked lowering of upper notes, a positive Rinné and normal low limits for Dench fork, cause is usually syphilis. Eight cases out of ten so studied showed Wassermann test either double or triple positive. Upper limits as shown by whispered voice were reduced to 1/25 or 1/35 by low voice. These cases would confirm in this clinical manifestation to Kerrison's third classification. He, however, depends for his diagnosis upon diminished bone conduction, negative Rinné, loss of hearing for highest musical tone plus constitutional evidences of that disease. In writer's case air and bone conductions were both lowered but their normal ration remained same. The Rinné was positive in every case. On looking up literature, writer ran across a note in which Urban makes same statement. This with a line in Politzer quoting Rohrer to same effect was all the reference obtainable. Politzer lays stress, however, upon a previous history of vertigo, nystagmus, headaches, or rheumatism, which was not obtainable in these cases. History was one of slowly progressive loss of hearing with only hearing test to suggest a specific origin.

A typical case is the following: James M., thirty-one years, widower, with two children, had had venereal disease nineteen years, and had been under treatment two years on two different occasions. Specific history was denied at time, but obtained later. History of deafness with tinnitus twelve months. No history of headaches or rheumatism. On examination, septum showed marked deviation to right. Large posterior ends of turbinates both inferior and middle. There was also an active epipharyngitis. Middle turbinates were indrawn and thickened and luster diminished. Hearing test was as follows:—

R.		L.
....		2/25
1/35 V	....	
$\frac{25''}{15''}$	$\frac{\text{A. C.}}{\text{B. C.}}$	$\frac{40''}{15''}$
	W together with +	
64	D.	 64

There was sufficient cause in nose and throat to account for trouble in middle ear, but here loss was markedly in highest musical tone. Duration was only a year; affection bilateral; Rinné positive and lowest notes unchanged. A Wassermann was triple positive.

Vaccines in Nose, Throat and Sinus Infections. Dr. G. H. Sherman of Detroit (by invitation): Therapeutic application of bacterial vaccines in nose, throat and sinus infections involves same fundamental principles which obtain in vaccine therapy as applied to localized infections in other parts of body. It is well known that acquired resistance to infecting organisms is most important factor in avoiding and overcoming disease, and from our present knowledge, concerning infections, it is also apparent that these immunizing activities are essentially developed by tissue actively involved. When we have localized infection usually but a comparatively small portion of body is involved. This is particularly the case in nose, throat and sinus infections. Not much tissue being involved in these cases, sufficient immunizing substances to bring about adequate constitutional resistance, thus properly backing up involved tissue cells in their fight to overcome infection, is slowly developed. Natural result is that in many cases these infections become chronic.

Nasal mucous membrane 1/32 of an inch thick would require 32 square inches to make an inch of tissue. Submucous tissues 1/16 of an inch thick, would require 16 square inches to make a cubic inch of tissue. Compared to body weight this is but a small fraction. All the rest of body is practically inactive in immunizing process.

In treatment of these localized infections with bacterial vaccines we aim to call some of these inactive healthy tissues into active immunity producers and thus build up a systematic resistance to aid infected tissues in overcoming infection. By injecting a sufficient number of killed organisms under skin a much larger amount of tissue becomes actively engaged in producing antibodies than what takes place in nasal mucous membrane. Furthermore, clinical experience shows that a more marked immunizing response is obtained from the injection of killed bacteria than from an active infection. This may be accounted for on ground that living germs have a very devitalizing destructive influence on tissue cells by digestive enzymes they produce, and also by a probable toxic autolysis. When dead bacteria are injected into the body, no digestive enzymes are created that have a destructive action on surrounding tissues, nor does there occur an autolysis with production of toxic materials that would inhibit immunization. Therefore entire cell energy can devote itself to production of immunizing substances and consequently there results a larger measure of immunity than progressive infection is capable of producing.

Necessarily to successfully treat infections with bacterial vaccines same variety of organisms must be contained in vaccines that are present in the infection. In nose, throat and sinus infections, mixed infections almost invariably exist of which pneumococcus, streptococcus, staphylococcus and micrococcus catarrhalis are most common. Where single organism infections exist complicating infection will soon develop. For this reason a combined vaccine containing principal infecting organisms is preferably employed.

Best results are obtained in early acute stages. By using vaccines early, enough immunizing resistance may be developed in time to prevent excessive inflammatory deposits which interfere with drainage and consequently rapid recovery will take place. In advanced cases where surgical and other measures are necessary bacterial vaccines are valuable adjunct remedies in aiding to overcome the infection and establish a permanent cure.

Slow development of a systemic resistance to acute infections of upper respiratory tract is often responsible for serious troubles following these so-called "colds." From these acute localized infections pneumococci or streptococci often gain entrance to blood current. This may lead to a serious pneumonia or bronchopneumonia, endocarditis, inflammatory rheumatism, nephritis or other localized infections.

Infecting organisms while circulating in the blood do not stimulate a material production of resisting antibodies. These antibodies are only actively produced after infection has localized in some tissue and a localized inflammatory process has been established. For this reason it is very important to treat these acute localized infections with bacterial vaccines because tissue activity for production of antibodies is stimulated and a systematic resistance to invading organism established while infection is still a minor local affair. From these considerations importance of giving bacterial vaccines in infections of the upper respiratory tract is quite obvious.

Dr. Mosher, Boston, explained and gave a demonstration on numerous dry specimens of his new operation for exenteration of ethmoid capsule. Dr. Mosher has designed a long, sharp-peaked curet for this operation. Technic: After parts have been thoroughly cocainized curet is inserted between ethmoid capsule and septum as high up as possible and about one half inch from anterior insertion of middle turbinate. Sharp peak of curet is forced into ethmoid capsule going through entire thickness. All the tissue, that is anterior portion of middle turbinate, is removed with curet as is also all of ethmoid cells lying between middle turbinate and lateral wall of nose, middle turbinate acting as a guide and protecting cribiform plate of ethmoid during curetment. Remaining pendulous turbinate is removed last by biting forceps, thus completing operation. Robert F. Ridpath, Reporter.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of May 4, 1914, at 3:30 P.M., Dr. S. Lewis Ziegler, Chairman.

Tubercular Keratoiritis; Increased Tension; Pain; Contracted Fields of Vision. Dr. S. D. Risley presented a sturdy Italian fruit dealer, aged fifty-one years, who had been referred to his clinic at the Wills Hospital in February, 1914, with painful eyes, marked impairment of vision and contracted fields. O. D.: V.=6/xv., field contracted to 15° and nearly concentrically. The fundus was fluffy, and details blurred; no cupping could be determined. The anterior ciliary vessels were dilated, but did not present the appearance of a chronic inflammatory glaucoma. O. S.: V.=3/22, and field contracted to a small area around fixation point. T.=52. The man suffered greatly from pain in the eye and left side of head and occiput. The cornea was not steamy; the pupil was not dilated, but contracted under eserin; the nerve was deeply cupped.

He was admitted to the hospital, March 14, 1914, and placed on hot stupes locally, and magnesium sulphate internally. Two days later, March 16, a broad peripheral iridectomy was done on the left eye, and was followed by complete relief from pain. The wound closed promptly, but the convalescence was slow, the eye remaining red and uncomfortable, and the wound pouting. The tension sank to 15, but occasionally rose to 30 or even 32 mm.

On March 25, one week after the iridectomy, a small nodule appeared on the iris below the coloboma; and several gray dots, on the posterior surface of the cornea, near the angle of the anterior chamber. The von Pirquet test was markedly positive, and produced a rise of temperature and local reaction in both eyes. This was followed, in a few days, by improvement in the ocular conditions and general health. The tension in both eyes fell to normal, the discomfort and injection disappeared, and the fundus cleared.

Dr. Risley called attention to the fact that notwithstanding that no operation had been done on the right eye, the fundus cleared, the tension fell to normal, and the field and central vision improved under the general regime and the tuberculin injections. He thought that the original ocular infection was doubtless in the uveal tract, the tubercle on the iris and the deposits on the posterior surface of the cornea at the angle coming later; and that the products of uveal inflammation had blocked the excretory channels and produced the increase of tension and the glaucomatous sequelæ. He said that he had presented the case as an interesting illustration of the clinical history and pathologic significance of uveal disease in the production of increased tension of the eyeball. The increased tension, he regarded as a sequel to the uveal disease due, in the case presented, to tubercular infection.

Pituitary Tumors. Dr. T. H. Weisenburg (by invitation) said that the pituitary body is made up of two lobes, an anterior and a posterior. The anterior is the glandular part. It is supposed that the pituitary secretes a substance which gets into the cerebrospinal fluid, and exerts its influence in that way. A lesion of the pituitary body causes two sets of symptoms, one the result of involvement of the pituitary, and the other the result of pressure on the neighboring structures.

The first symptom of pituitary disease would be due to involvement of the optic chiasm, since the gland lies in the sella turcica, the upper outer temporal field usually being first involved. The color field is disturbed first. This is not unusual. A brain tumor exerting intracranial pressure will do likewise.

After color and form fields go, the macula is implicated. Here, also, color goes first, and form afterwards. Then follows loss of the nasal field, as well as the temporal. The second symptom is optic atrophy. This is primary, and not secondary to choked disc.

If you examine a patient and find bitemporal hemianopsia or complete loss of vision, the question is whether to operate or not; and whether, if you do operate and remove the tumor, a return of vision will occur. In many cases, you do get this, in spite of seemingly complete blindness. The reason is that the loss of vision is due to the fact that there is complete blocking of impulses from the periphery to the primary visual centers, and not to degeneration of the optic nerve fibers. One should base the decision in regard to operation, not on loss of vision, but on the degree of optic atrophy.

The other symptoms are those which result from pressure on the cranial nerves and other structures. Pressure on the olfactory nerve gives loss of smell; on the oculomotor nerve, ptosis and involvement of the muscles of the eyeball. If there is pressure on the uncinate lobe, there occur peculiar convulsions, first described by Hughlings Jackson—the so-called uncinate form of fit. Dr. Weisenburg had had such a patient several years ago, on whom Dr. Frazier had operated. When standing up or walking, he would suddenly begin to smack his lips and smell a peculiar odor. He could not describe this odor, but said that it was different from anything else. He also tasted something that he described as metallic. Then he would fall in a fit. He had uncinate convulsions, due to irritation of the uncinate lobe, which is associated with the center of smell and taste.

If the tumor still increases, it presses on the cerebral peduncle. The foot of the peduncle transmits motor fibers chiefly.

Recapitulating, Dr. Weisenburg said that the first symptoms are visual, embracing involvement of the color perception in the upper outer part of the visual field, followed by loss of form perception. The second symptom is optic atrophy; the third, oculomotor palsy; and the fourth, uncinate disturbances.

The best way in which to diagnose a pituitary tumor, he continued, is by the x-ray. He then exhibited three sets of x-ray plates taken by Dr. Pfahler. In one, the patient had the following group of symptoms: There was first, loss of menstruation, followed by drowsiness and headache. Ophthalmoscopic examination demonstrated loss of the upper, outer part of the visual field. The diagnosis of pituitary tumor was then made. The tumor was not in the sella turcica, but above, as could be made out clearly from the plate.

In contrast, Dr. Weisenburg showed a second case, in which the tumor was very large, and was located within the sella turcica, there being absorption of that part. He then referred to the work of Cushing, who makes the following arbitrary differentiation of the glandular symptoms: There may be (1) increase of excretion, or hyperpituitarism; (2) loss of secretion, or hypopituitarism; (3) a combination of loss and increase, which is really what occurs in most cases. If there is an increase of secretion, there may be overgrowth of tissue. If this occurs in a young person, there results gigantism. Dr. Weisenburg showed a patient of that type before one of our societies during the past winter. The boy was sixteen years old, and was six feet, seven and a half inches in height. Besides, he was formed like a woman, and the genital organs were undeveloped. When this condition occurs in an older person, in whom the epiphyses have ossified, acromegaly results. If there is a loss of secretion, or hypopituitarism, in a young person, there is lack of growth, with fatty deposits all over the body, and infantile sexualism or a hypoplasia of the sexual organs. Besides, there is increased tolerance for carbohydrates. In an old person with hypopituitarism, if a woman, there may be loss of menstruation, fatty deposits and increased tolerance for carbohydrates, in addition to the focal symptoms. The majority of cases, however, combine both factors. Personally. Dr. Weisenburg had never seen a clear-cut case of either hyper- or hypopituitarism, but always a combination of both.

(Continued in December.)

PITTSBURGH OPHTHALMOLOGICAL SOCIETY.

Meeting of October 12, 1914, Dr. E. B. Heckel, Chairman.

Radium Treatment of Sarcoma of Orbit. Dr. Heckel presented a patient, C. W. W., aged fifty years, by whom he had been consulted in April, 1912, on account of a somewhat blind, shrunken left eyeball. Immediate removal of the shrunken blind eye was advised but the patient decided, after consulting several other oculists, not to have it enucleated. In September, 1913, he returned with a decided increase in the orbital contents. He was then sent to the Allegheny General Hospital, where the left eyeball was removed. The sclera had been perforated by a very strongly pigmented mass about the size of the eyeball itself, which was removed with the eyeball, and the whole of it sent to the laboratory and later pronounced melanosarcoma by Dr. Haythorne, the pathologist. The orbit healed kindly and left a good socket. The patient was cautioned about a probable return of the tumor mass and asked to return at once as soon as anything was noticed. The orbit remained quite negative until about March 10, 1914, when the orbit began to fill very rapidly. The patient was seen on March 24, with the orbit quite well filled and bulging, as seen by the photograph. On March 27, 1914, a tube of 53 milligrams of radium element, screened by 2 mm. of lead and rubber tubing, was inserted into the orbit after making a free incision and allowed to remain in place for eleven hours. After this exposure the orbital contents became decidedly less and by April 10, the tumor mass could be distinctly palpated and seemed circumscribed, so that it was decided to remove as much of this mass, surgically, as possible. On Tuesday, April 14, a mass about as large as a chestnut was removed from the orbit under ether anesthesia. The orbit was packed and on the next day, 53 milligrams of radium element, screened by 2 mm. of lead and rubber tubing, was inserted into the orbit and allowed to remain in place for thirteen and a half hours. Since then, there has been a decided decrease in the orbital contents. There was no discomfort nor any elevation of temperature following either of the rayings. The patient continues under observation.

Dislocation of Lens Into Vitreous. Dr. Stieren reported the following case: J. H., male, forty-five years of age, was struck in the right eye six weeks ago with a broom handle. Under the care of his local physician the pain and inflammation of the eye cleared up so that the only symptom complained of, when first seen by Dr. Stieren, April 4, 1914, was failure of vision in the right eye, which equaled counting of fingers at three feet. External examination of eye: Cornea and sclera normal; pupil partially dilated, 4 mm. in diameter; iris slightly tremulous; anterior chamber slightly deeper than in left eye. Tension 20 mm. of Hg. With a + 15. D. lens, vision could be brought to 6/10 and with a lens of similar strength in the ophthalmoscope the details of the fundus could be plainly seen, revealing the crystalline lens lying in the vitreous chamber, well forward. Left eye, with +3.50 D.S.=V.6/6.

Ophthalmoplegia Following Decompression Operation. Dr. Weisser reported a case of complete ophthalmoplegia in one eye, and ophthalmoplegia interna and partial ophthalmoplegia externa of the other, in a young girl of twenty-four years of age, following a decompression operation for the relief of increased cerebral pressure (suspicion of tumor of brain). Both optic nerves were normal just following the operation, but subsequently, in four to five days, began to get pale. Following the operation which was performed next day, the patient's vision fell to light perception. Before operation vision and fundi were normal. Patient has not been seen since ten days after the operation, as she was removed to her home in West Virginia.

Trachomatous Pannus. Dr. Sturm reported a case of trachoma with marked pannus that was greatly benefited by the use of mercury bichlorid rubs of the conjunctiva. The patient was a male, aged thirty-two, and was first seen in April, 1913, when the vision of the right eye was fingers at three feet, and on the left eye at one foot. Three days later, vigorous rubbing of the conjunctivæ was performed with 1 to 500 mercury bichlorid solution, followed by the use of iced compresses. Ten days later, the rubbing was repeated; marked improvement resulted and the vision steadily improved. Copper solution was used at home and brown ointment was employed at various times at the office. The vision is now 20/70 in the right eye and 20/100 in the left. There still persists a small vessel, extending across the cornea of the left eye to a salmon-colored patch over the pupil. This vessel has been repeatedly cut and ligated but it still remains, although it is gradually getting smaller.

Optic Neuritis. Dr. Curry reported a case in a female aged thirty-one, who gave a history of impaired vision of the left eye beginning some days before. The previous health had been good. She had had nasal treatment but no sinus trouble. Her two children were in good health. Upon examination a unilateral optic neuritis was discovered; the vision was 20/70 and continued to fail rapidly until, in a few days, it was 20/200. A large central scotoma developed ten days after the vision began to fail and vision then fell to fingers at eighteen inches. The right eye was normal. No cause for the trouble could be found. Her husband, a physician, had had trouble for several years with his tibia and had had an operation or two performed thereon; he showed a positive Wassermann reaction and was benefited by the use of salvarsan. Neither the patient nor the children showed any evidences of lues and a Wassermann test was negative. The eye trouble was said to have started after a fright at night, as on the next day she had severe pain in the eyeball.

Dr. Heckel stated that he had seen a case of acute iritis of both eyes in a horse following bites by a dog on the rump and the hind legs. In his opinion, the iritis was due to fright.

Adolph Krebs, Secretary.

COUNTY SOCIETY REPORTS.

ALLEGHENY—October.

The meeting of the Allegheny County Medical Society was held in the Assembly Room of the Pittsburgh Free Dispensary Building, October 20, President John A. Hawkins in the chair. About 200 members were present.

Dr. E. O. Pearson exhibited a specimen of fetal spina bifida. The scientific program opened with "Hemolytic Jaundice" by Dr. Jacob Rosenbloom. This subject was illustrated by several charts showing the results of numerous physiologico-chemical tests in the study of a case, and in conclusion a series of tests was elegantly demonstrated.

Hypotheses are regarded as faulty, but are, according to so great an authority as Emanuel Kant, necessary. The hypothesis presented this evening relative to hemolytic jaundice is due to Dr. J. P. McKelvy and myself. We are trying to devise a scheme for the function of the spleen and of cholesterol. Cholesterol is a necessary, and not a waste, product. Among types of jaundice, we have the jaundice due to obstruction, that due to perversive function of the liver cells, and hemolytic jaundice, in which there is erythrocytolysis.

The case we studied was marked by anemia, splenomegaly, jaundice from birth, and lessened resistance of liver cells. The urine contained neither bilirubin nor hemoglobin. The feces contained at no time bilirubin nor hemoglobin. The sulphur metabolism in the urine was found to be absolutely normal. High ethereal sulphates on two days were due to constipation. Loss of nitrogen on sufficient intake indicated a toxic condition of the body, a toxigenic destruction of protein. The uric acid in the urine was very highly endogenous, and means in this condition increased destruction of red blood cells. There was tremendous excretion of iron in the urine and feces and the phosphates showed considerable loss of phosphorus.

My hypothesis is that jaundice is due to cholesterol metabolism. Freezing causes laking of the blood. The addition of distilled water, saponin, ether, urea, sodium glycocholate, sodium taurocholate, and acetic acid to the blood produces hemolysis. The addition of cholesterol to saponin prevents hemolysis. After splenectomy cholesterol is halved in the blood stream and doubled elsewhere, but the total is the same as before. Increased production of the red blood cells is due to the hyperfunction of the spleen and increased cholesterol is due to the breaking down of a great many red blood cells. Hemolytic jaundice is always associated with great excretion of cholesterol. Dr. Rosenbloom then exhibited specimens of the white, flaky-crystaled cholesterol and the antagonistic red lecithin, and demonstrated the following tests, employing washed red blood cells in tubes.

1. Ether plus red blood cells,—result, transparency.
2. Sodium taurocholate plus red blood cells,—result, transparency.
3. Saponin, 1 to 10,000 plus red blood cells,—resulting very quickly in transparency, saponin being a very strong hemolyzer.
4. Urea plus red blood cells,—result, transparency. Urea is a strong hemolyzer.
5. Normal salt solution plus red blood cells,—result, no change. This is a control test.
6. Distilled water plus red blood cells,—result transparency. This is a physical hemolysis.
7. Acetic acid plus red blood cells,—result transparency—a quick hemolyzer.
8. Cholesterol added first to red blood cells, then saponin,—result hemolysis much delayed, varying according to the amount of the agents used.

Dr. Theodore Baker read a paper on "Prostatic Massage. Its Uses and Limitations." Dissatisfaction with the ordinary treatment of prostatitis has led me to the study of many cases in the last several years. The massage of the prostate and seminal vesicles is generally recognized, but is much abused by indiscriminate use. It was first used in 1882, but first was popularized by Eberman and Brand in 1892. A peculiar characteristic is that the literature on the subject contains little or no definite contraindications to its use. As to the technic, the pressure should be just strong enough to express the gland contents, the seminal vesicles should be gone over each time thoroughly, more to locate nodules than to massage. Irritation of the mucosa should be avoided. Record findings of examination of expressed material, whether pus, lecithin, sperm, bacteria, and so on. The physical action of massage is the decongestion of the gland, and the stimulation of a poorly developed one. Reactive hyperemia may occur.

Massage is contraindicated in cases of tubercular infection. In cases marked by smoky and frequent urine, search for the bacillus tuberculosis. Contraindication also exists in secondary and chronic affections, especially · those leading toward abscess formation. It is folly to massage gonococcic cases, and many complications, particularly epididymitis, have been due to ill-advised massage. These cases demand drainage. Localized swellings must not be regarded as due to abscesses. The mortality from suppurative prostatitis is not over four per cent. Arthritides are the most common sequelæ. Many cases are hematogenous alone. Prostatitis is often mistaken for cystitis. In chronic affections the urine may be clear at first, but after a few treatments becomes cloudy, contains bacteria, and sequelæ occur. Autogenous vaccines are of some value. Massage is contraindicated in cases where the age is over fifty years, and where malignant disease or prostatic bars cause obstruction. In young men with hard, tender prostates, look for the bacillus tuberculosis.

In conclusion, Dr. Baker called attention to the fact that prostatic massage may be somewhat irritating, maintained that it should never be used until gonococci have disappeared from the urine, and particularly emphasized that the prostate must not be massaged in chronic gonorrhea.

H. P. Ashe, Reporter.

DELAWARE—October.

The meeting of the Delaware County Society was held at Chester Hospital, October 15, at 3:30 p.m.

Dr. M. Behrend of Philadelphia read a paper on "The Symptoms and Treatment of Enlarged Prostate." He spoke of the marvelous results that surgery has accomplished in rejuvenating old men *via* prostatectomy. It is not unusual to see decrepid old men with infected bladders restored to health and able to resume their occupations. This paper is based on fourteen cases. The anatomy was carefully explained, as was also the causes of enlarged prostate; these included repeated attacks of gonorrhea, some arteriosclerosis. They occur at almost any age but usually in advanced years. Pathologically, prostates are usually found to be fibroadenomata or malignant. The colored person seems less predisposed than the white, one patient in the fourteen cases being black. The ages in this series of cases range from sixty-four to eighty years. Symptoms are as follows: Frequency of urination, difficulty of starting the stream, retention and overflow, vesical tenesmus, cystitis and ofttimes hematuria. In catheterizing, it is always advisable to start with a soft catheter then gradually to use the semisolid or solid types. The treatment is so-called medical treatment and surgical. The medical treatment includes improved hygiene, diet, avoidance of spirits, and highly seasoned foods; avoid all draughts; take hot sitz baths; attend to the bowels regularly and urinate at regular intervals. Urotropin is the sheet anchor at all times, both before and after operation. The best prevention for all complications is prostatectomy. This may be performed either perineal or suprapubic. One is as effective as the other. The mortality is about the same. The suprapubic has the advantage of being easier to perform. In this series two only were perineal.

Examine the urine before operation for albumin and casts. In most people at this age casts and albumin are the rule but are not contraindications to operation. It is more important to determine the twenty-four hour excretion. This is not a positive sign and the functional kidney tests with indigocarmine or phenolsulphonephthalein should be made. It makes little difference to the patient as regards his age, as long as his arteries are soft. Differing from the usual technic, the fossa from which the prostate is taken is sewed to prevent hemorrhage. The bladder is sewed shut except at the fundus where the drainage tube is held in place by a purse-string suture. All dead spaces are obliterated in the abdominal wall. Continuous irrigation is then used for several days until the water returns clear. In cases operated on in this way the wound heals up in two or three weeks, barring complications, and the patients are able to urinate on the same day of operation. Hypodermoclysis is given immediately following operation. The next day the patient is made to get up out of bed. This prevents circulatory disturbances and gives the patient confidence that he is getting along quickly. Sounds are passed the first four weeks to prevent stricture, the first being used ten days after operation. Complications most feared are pneumonia and suppression of urine. The upright position and ingestion of large quantities of water tend to overcome these. Epididymitis is a common complication and follows irrigation and the passage of sounds. Four of the fourteen cases developed this complication.

The paper was discussed by several of the members present. One who had been so operated on described the relief which followed—both physical and nervous.

W. E. Egbert, Reporter.

HUNTINGDON—October.

The Huntingdon County Society met at the Huntingdon Club Rooms, October 8, at 1:30 P.M., with Dr. R. H. Moore in the chair and eighteen members present.

Dr. S. J. Waterworth of Clearfield gave a most interesting paper on "Exophthalmic Goiter." The essayist after going over the anatomical relations of goiter spoke in brief of the histology and noted that marked symptoms follow complete extirpation of the gland. He then named the pathological classification as adopted by the Mayo Clinic, and stated that we are chiefly concerned with three clinical types: The hyperplastic goiter (true exophthalmic), the simple toxic goiter, and the simple goiter without toxic symptoms. He then spoke briefly of the history of our knowledge of the condition known as Graves' disease or exophthalmic goiter and the probable mechanics of exophthalmos. After speaking of the chief symptoms of the course of Graves disease, the subject of causation was left open for discussion. He noted that simple goiter may cause dangerous symptoms due to pressure upon the trachea and reported a case of a patient having a severe type of asthma without apparent cause, which had been diagnosed fibroid phthisis but shown by operation based upon x-ray plate to be an intrathoracic goiter, and in which the operation was followed immediately by permanent relief. Hemorrhage into the gland may also bring about an emergency situation. He then discussed the various methods of operation for goiter and general measures of treatment.

The paper was discussed by all present.

J. M. Keichline, Jr., Reporter.

LEBANON—October.

The Lebanon County Society held its regular meeting in the courthouse, Lebanon, October 13 at 3 P.M., Dr. John Walter presiding.

Dr. D. M. Rank read a paper entitled "Hysteria, with Special Reference to Its Distinguishing Features from Neurasthenia." In the etiology of hysteria, Dr. Rank offers heredity as a principal factor. Alcoholism, drug habits and consanguineous marriages are held important etiologically. It is more common in females and most frequent from puberty to thirty or forty years of age. In racial predisposition the Hebrew is foremost. In neurasthenia, like hysteria, heredity plays an important part in the etiology of the disease and often occurs in those whose parents have been of a neurotical or hysterical type. Males are more disposed to acquire neurasthenia than are females. No definite morbid changes have been recognized in the nervous system in either disease. Dr. Rank divided the symptoms of hysteria as follows: Motor, sensory, vasomotor, digestive, respiratory and cardiac. In the discussion of the hysterical convulsion the speaker mentioned two kinds, *i. e.* minor and major. The former are the more common while the latter are rarely seen. The patient with neurasthenia has a worried expression, muscular weakness and maybe some affection of the special senses. He suffers with insomnia and frequent digestive disturbances. The prognosis in both diseases is good. In the treatment, drugs play a minor part, for it is largely the personality of the physician that contributes most for recovery. Orders must be strict and carried out to the letter. Electricity and massage have been found useful. The Weir Mitchell rest cure was commended. A lively discussion followed in which many interesting and instructive incidents were related, secretary Strickler opening the discussion.

George R. Pretz, Reporter.

PHILADELPHIA—October.

The Philadelphia County Society met October 28, at 8:30 P.M., President Robinson in the chair.

Dr. William S. Newcomet exhibited a case of sarcoma of the jaw treated with radium with entire disappearance of the mass.

"Abdominal Pain; Its Significance and Diagnostic Value" was read by Dr. John B. Deaver. Perhaps no better definition of pain has ever been given than the picturesque statement of Agnew that "pain is the language of a suffering nerve." In order to diagnosticate disease we must be able to read the language. At least ninety per cent. of all diseases begin with pain or give rise to it at some time in their course. Ordinarily pain is the result of undue stimulation of nerve fibers by mechanical chemical or thermal agents. Such pain is objective. There is a type of pain which has no external physical basis. It is a product of disordered mental action. This is subjective pain and is illustrated in the phenomena of hysteria. Such pain belongs to the domain of the neurologist. It is a confession of ignorance to give to pain a name which has no pathological significance. All the various "algias" should be replaced by terms conveying an understanding of the underlying processes. The surgeon has found the abdomen to be a veritable Pandora's box of troubles which, however, fly away when the box is opened. No more stimulating example of the discovery of the hidden cause of pain can be imagined than the recent demonstration of duodenal ulcer as the source of a frequent type of gastric pain.

The first great obstacle to the appreciation of the significance of abdominal pain has been the belief that the majority of pain in this region was the result of disordered function. The so-called neuroses figured largely in abdominal diagnosis, but the surgical era has driven these into a very small field destined to be further circumscribed. The second great difficulty in abdominal diagnosis is the inability of the nervous system accurately to localize sensations received from visceral areas. For the understanding of peculiar manifestations of faulty pain localization we must be familiar with certain modes of nerve action. It is well to bear in mind that pain in the abdomen is *per se* no evidence that the lesion is in the abdomen. Abdominal pain associated with pleurisy or pneumonia, particularly in children, is probably of a reflex nature. Angina may give rise to intense epigastric pain simulating acute surgical disease of the upper abdomen.

It is necessary to be familiar with the various types and degrees of pain that disease of the organs of the upper abdomen may cause. It is in the milder forms and beginnings of disease that the location of pain is of the greatest value. Of all the organs in the abdomen the stomach presents the greatest variety of symptoms and the most difficult to analyze. If general disease of the stomach is excluded. gastric symptoms should prompt a careful and systematic survey of the abdominal organs. Grossly insignificant chronic disease of the appendix may set up pylorospasm with pain, retention, fermentation and secondary gastritis. It is of the utmost importance to investigate by history and examination of the right iliac fossa, every case presenting epigastric symptoms commonly referred to the stomach. The diseased gall bladder frequently masquerades as a gastric affection. To make an impression upon students I often say, "Fair, fat and forty, belching gas—gallstones." While a trifle dogmatic, the diagnosis is remarkably often justified.

Adhesions are of two types, congenital and acquired. Omental or other adhesions I do not hesitate to sever when found in unusual positions. More extensive operative work involving an interference with a poorly understood physiology and for other indications than obstructive symptoms is rash surgery. Nature is the most wonderful artist in the removal of adhesions. Obstructive symptoms in any case following operation or which is believed to have abdominal adhesions calls for immediate surgical operation. Adhesional pain should never be treated with narcotics. At least a year should elapse before operative relief of postoperative adhesions is advised, except in the case of serious symptoms.

There is too much morphin used as a routine measure after abdominal operations. When pain makes its appearance on the second or third day or later following operation the conditions chiefly to be considered are simple distention, peritonitis and obstruction. The most important single feature in differentiation is the character of the pain, whether wavelike and intermittent, or steady and associated with tenderness. The pain of distention and obstruction is, as a rule, colicky and wavelike; that of peritonitis, more steady, diffuse and unremitting. I realize more and more the difficulty of attempting to classify and systematize abdominal pain in its relation to visceral lesions. There is a rough parallelism sufficient in most cases to warn us of the presence of a pathological process and which often gives us much information as to its nature. Often, however, we are obliged to rely upon experience and our knowledge of the probabilities.

Dr. John B. McAlister, Harrisburg, in discussing: Why should I impart to this audience now little I know about abdominal pain? Perhaps I can best speak on the subject by citing some cases. Not so long in the past I was called to see a lady suffering from severe abdominal pain. I tried to follow the instructions of my teachers in making a careful and accurate diagnosis by placing my hand upon the various points, asking whether the pain were of such and such character. Finally the patient replied rather testily, "No, it's not that kind of a pain; it's a ——— bad pain; give me something to relieve it." While that may appear to be a rare character of pain, one not mentioned in Dr. Tyson's text-book, and probably not mentioned by Dr. Deaver, in public at least, it is not really such a rare pain. When we are called to see a patient between midnight and morning it is pretty often that kind of a pain we have to deal with. We often go home not able to interpret the language of these pains and feel that the patient has pretty well described the pain in the abdomen. In spite of all our knowledge of anatomy and pathology in the abdomen, notwithstanding all our landmarks, exploratory operations for diagnostic purposes will be made. I know of no way of recognizing the referred abdominal pain occurring at the beginning of pneumonia except by careful diagnosis.

Not long ago I was called to see a lady at a bridge whist party taken suddenly with severe pain which I felt sure was caused by kidney stone; the pain was as characteristic as any renal colic I have seen. Operation revealed a fibroid tumor with considerable colloid degeneration. The woman had been in apparently good health until that attack of pain. I could not account for the severe pain except that there may have been a twisted pedicle. Another pain in the upper abdomen which is of supreme importance is that of acute pancreatitis or hemorrhagic pancreatitis. It has been my sad fate to see four of these cases. In the first and second cases the diagnosis was made upon the autopsy table; in the third and fourth the diagnosis was confirmed upon the autopsy table. All were in adults and without history of previous ill health. Acute sudden pain seems to me one of the greatest tragedies in abdominal conditions. I should be glad if in the discussion we may be instructed how we can more definitely, from the character of the pain, distinguish between gastric and duodenal ulcer and pancreatic disease.

Dr. J. Wesley Ellenberger, Harrisburg: The paper of Dr. Deaver is a fitting close to a very profitable day. I am in accord with Dr. Deaver in regarding pain as a beneficent factor. It would seem to be a divine signal given us by a loving Creator as a warning that something is wrong. We should not expect to get rid of pain without removal of the cause, and in ascertaining the cause the utmost care is necessary. I have seen a case presenting all the typical symptoms of appendicitis upon admission to the hospital show signs of pneumonia on the following morning.

Dr. Joseph Sailer: As Dr. Deaver has suggested, the abdomen has almost ceased to be the domain of internal medicine. Pain is a subjective affair, something felt by the patient, which we can not measure; and, while experience may give us a proper estimate of the patient's manifestation of pain, we may be deceived by those who exaggerate or underestimate its degree. I agree with Dr. Deaver that the use of the various "algias" should be discarded, and that, with remarkable frequency, pain in the epigastrium means disease elsewhere. It is astonishing how often patients, with valvular heart disease and with tuberculosis of the lungs, come to the physician complaining of gastric symptoms. Only by the most careful physical examination can we detect the true underlying lesion. Acute endocarditis in the early stages may so simulate abdominal conditions that operation may seem imperative. The amount of literature at the present time upon the subject of intestinal stasis with the extravagant claims made by some surgeons is appalling to the internist. The evidence, however, is purely superficial and, upon such evidence, surgical treatment is unjustifiable.

Dr. Wilmer Krusen: I would emphasize the necessity of a bimanual examination in all cases of appendicitis to determine whether the appendicitis is coexistent with pelvic disease or whether all the symptoms are due to salpingitis. The pain of ectopic pregnancy is of such gravity that physicians should be mindful of its possibility in cases of abdominal pain. Then to be considered are the pains associated with neoplasms. In fibroid tumors there is pain due to pressure conditions. In no condition in gynecology would pain be so beneficent as in malignancy. The surgeon would welcome the fact that a woman with beginning cancer had pain.

Dr. A. C. Morgan: It is very important that we differentiate between acute and chronic pain. In a large percentage of cases acute pain constitutes a surgical condition calling for prompt action for the saving of the patient's life. I have come to regard the term "dyspepsia" as a very dangerous one, because in the light of our present knowledge we know this condition is not present, but that the stomach is giving us warning of trouble elsewhere. The man who is content with the routine treatment of "dyspepsia" with nux vomica, etc., is careless or ignorant and is not a credit to the medical profession in 1914.

Dr. James Tyson: I was called yesterday to see a patient with abdominal pain, paroxysmal in character and with history of traumatism. The attacks of pain were of slowly increasing severity resulting in collapse. The patient's abdomen was swollen and to my inquiry of the location of pain he replied that it was general. Passing my fingers in the region of the appendix I found evident tenderness, yet there was nothing that was distinctive any more than in the numerous cases of pain which have been described suggesting gastric ulcer or pancreatic disease or duodenal ulcer. I came here wishing to get some light, which illustrates the propriety of meetings like this. I have not yet made a diagnosis of this case and should be very glad if those who are here would help me out.

Dr. Damon B. Pfeiffer gave a lantern demonstration of some of the important points of Dr. Deaver's paper.

Dr. S. Solis Cohen: I would reiterate the plea of Dr. Deaver that we do not attempt to hide our ignorance by the use of the various "algias." I would not eliminate functional disturbance of the viscus from among those conditions giving rise to pain in the abdomen. That too often organic disease is overlooked from want of careful examination is true, but when careful study has been made, and the evidence points to the so-called functional disturbance, then the physician is justified in carrying out medical measures. Several times in my experience I have been unable to exclude appendicitis, gall stones or gastric ulcer without exploratory operation. A better understanding of the great sympathetic nervous system would give us more light upon such cases. Just as this system gives rise to reflexes, such as the pylorospasm, so it gives rise to pain referred to the same areas to which it would be referred without the viscus disease. The disease, however, is not in the viscus, but in the nervous system supplying it. There is such a thing as hysteria, but 99 cases out of 100 called hysteria are something else. In such cases I would advise exploratory operation. I want to thank Dr. Deaver for his reference to the comparative frequency with which acute pancreatitis expresses itself as epigastric pain. I have known cases in which death occurred prematurely because the significance of the pain was not realized. To make a diagnosis, one must not study pain or any other symptom alone, but must study thoroughly his patient.

WAYNE—October.

The Wayne County Society met at the Allen House, Honesdale, October 22, with eighteen members present and President Brady presiding.

Dr. J. M. Wainwright of Scranton read a paper on "The Present Status of Our Knowledge of Surgical Shock." Dr. George W. McCafferty of Farview read a paper on "Insanity and Its Present-Day Treatment." These were freely discussed by the members present, as were also some interesting features of the life and duties of medical men in general.

This flourishing society now numbers among its membership, with one or two exceptions, every physician in Wayne County. The members dined together at one o'clock.

F. A. Lobb, Reporter.

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ADDRESS.

THE EXTRACTION OF THE CATARACTOUS LENS IN ITS CAPSULE, AS PRACTICED IN THE COLTEA HOSPITAL, BUCAREST, ROUMANIA.

BY HOWARD F. HANSELL, M.D.,
Philadelphia.

(Address of the Chairman of the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

I desire to thank the Section for the honor conferred upon me by electing me to preside over this year's meeting. During my many years of membership in the profession I have never sought or desired the high offices and their accompanying duties. This is perhaps a regrettable attitude of mind since each of us should be willing to accept the responsibilities we thrust upon others. I ask, therefore, on account of my ignorance and inexperience in parliamentary usages, your considerate judgment.

It has been customary for the chairman to review the progress of ophthalmology during the previous twelve months. With your consent I will break this unwritten law, and I feel strengthened in this determination when I remember that a résumé of the advances of 1913 and 1914 would to each of you be but a repetition. Edward Jackson's praiseworthy monthly and yearly publications have become an essential part of our equipment; the American and foreign journals; the papers and discussions of society meeting, and the new editions of our standard textbooks; all these have made you familiar with the recent work in our special branch of medical science and practice. Therefore, with these apologies, instead of following the well-beaten track, I take this occasion to describe the operation of the extraction of the lens in its capsule as performed in the great ophthalmic hospital of Bucarest, by Professor Stanculeanu and his assistants.

I am within truthful limits when I state that ninety per cent. of cases of extraction of immature cataract by any method which leaves the capsule behind will be followed by retained cortex or lens masses. In some of these cases, fortunately not the majority, the unexpelled cortex leads to purulent infection, infective iridocyclitis and perhaps to glaucoma. We agree, I believe, that the ideal operation is the extraction of the lens in its capsule. Not only are the evils above alluded to avoided, but the patient is spared the months or years of semi-blindness while waiting for the lens to be sufficiently hard or the vision sufficiently bad to warrant operation. Again, the age of the patient is not a positively safe guide in leading to the determination of the consistency of the lens. The commonly accepted axiom that the cataractous lens in a patient sixty years of age or more, is hard and its cortex easily freed from its capsule, has many exceptions. Even at seventy years of age the extraction may not be complete. The extraction of the lens in its capsule is, therefore, the great desideratum both for immature and mature cataracts, for even though the lens be hard and may come away entire, the capsule remains as an obstacle to a clear pupil and requires a secondary operation.

Stanculeanu's operation described by himself[1] is briefly, as follows: "On the evening before operation (he usually commences his operations at 8 A.M.) I drop a one per cent. solution of homatropin into the eye to be operated on to dilate the pupil. I make the incision in the limbus cornea and it is somewhat larger than is usually made. Then a sickel-shaped forceps, the size of the Graefe iris forceps, is entered into the anterior chamber. In order to make its entrance easily, I introduce it closed, in the perpendicular position. Having entered the chamber, I open the forceps and having laid the round sides of its branches on the lens capsule, I press a little and endeavor to grasp the largest possible fold of capsule between the branches. By wide horizontal and upward and downward movements the zonula is ruptured. When I feel the lens has been dislocated, I let go my grasp of the capsule and withdraw the forceps. With pressure by two spatulas, I endeavor in the usual way to express the lens. The iris is replaced in its former position and eserin 1-100 or 1-200 is instilled."

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[1] Trans. Heidelberg Congress, 1910.

In 1912[2] he modified the procedure by omitting the homatropin instillation and substituting iridectomy. He also modified the forceps by introducing a small groove on the inner side of each branch. He believed that the danger of tearing the capsule is lessened by the new model. He reports 240 cases, ranging in age from forty to ninety-three years. They were not selected cases excepting with regard to the probable consistence of the capsule as determined by examination with electric light and magnification or the Hartnacks loupe. When the capsule is transparent, it is of normal consistence and in sixty per cent. to seventy per cent. of the cases operated on, it may be grasped and the lens dislocated. The more opaque the capsule, the thicker and the more difficult to grasp.

The operation is not suitable for the hypermature cataract, that with a small nucleus and milky cortex. It is almost impossible to pick up a fold of capsule because the branches of the forceps glide over it. It is here that the usual operation is more successful. The corneal section may be small and the fluid cortex easily, and in most cases thoroughly, expelled. Even if left behind, it is soon absorbed by the use of dionin and it is not inclined to cause iritis. Stanculeanu remarks that the older the patient the more frequently successful is his method, and, further, that the unsuccessful cases were those in which the capsule tore; those in which the capsule could not be grasped; and those in which the capsule, as a result of inflammatory action, had become attached to the fossa. Among 137 cases, eleven had postoperative hemorrhage; two had panophthalmitis; three loss of vitreous (two slight, one serious); two vitreous opacities; and three incarceration of the iris in the wound.

When the capsule tears, which means failure of this special method, the operation may be completed in the usual way. The single disadvantage is that the central area of the capsule may not now be removed by the toothed capsule forceps.

In Professor Stanculeanu's presence and under his direction I was permitted to perform this operation three times and to witness, at close hand, the operation as performed by himself and his assistants, twenty-eight times. With your permission I would like briefly to give the salient points and to sum up the conclusions I have felt justified in drawing.

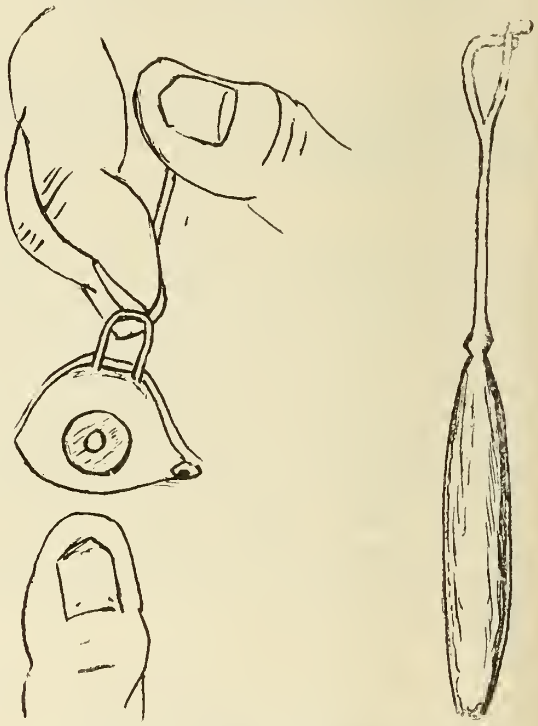
Figure 1. Double hook for elevating lid.

1. Thorough anesthesia by cocain four per cent., instilled six times at intervals of four minutes. In the first and last instillation the cocain is combined with adrenalin 1-2000.

2. The conjunctival flap: (See Figure 1.) In every case a conjunctival sliding flap is made, either according to the usual method of picking

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[2] *Klin. Monats. für Augenh.*, **March.**

up the conjunctiva in the horizontal meridian three or four millimeters from its attachment to the cornea, with the forceps, making a small opening through which one blade of the curved conjunctival scissors is inserted, incising the membrane as far as its vertical meridian with one snip and finishing the incision by a second stroke of the scissors, ending this cut at a point corresponding to the point of entrance and 180 degrees from it; or according to the method suggested by Dr. Elinor Puscarin, one of the assistants. She commences the incision at the upper meridian and divides the conjunctiva laterally and upwards towards the inner and outer angles of the superior cul-de-sac. After making the incisions, the conjunctiva, without its underlying connective tissue, is separated by repeated snips of the scissors from the bulbus, in each method as far as is necessary to supply ample covering for the upper third of the cornea. Stanculeanu prefers the first described method, and rather insists that the flap shall be made with two instead of several strokes of the scissors. Finally, a suture is inserted in either side, the knot loosely tied and the loops of thread pushed out of the way. He claims that the advantages of the flap are preservation of intact vitreous, rapid closing of the corneal wound, prevention of entrance into the anterior chamber of foreign or septic material and a safeguard from accidents during convalescence. The disadvantages are the addition of one more step to the operation of extraction and the possibility of interference by the threads with the use of the knife. The making of the flap prolongs the operation, but it can not justly be considered a complication since it precedes the opening of the ball. The threads are never a hindrance unless the operator has forgotten to push them to one side, an unlikely omission. Hemorrhage from the conjunctival vessels is sometimes annoying, notwithstanding the free use of cocain and adrenalin, and after the section of the cornea the blood may percolate into the anterior chamber from which it is with difficulty expelled. The hemorrhage is never serious nor does it compel the substitution of any other method for the safer extraction.

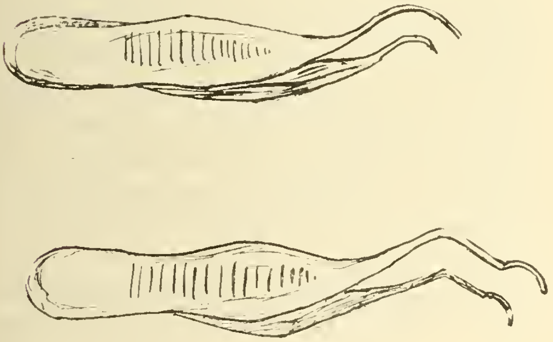

Figure 2. Capsule forceps.

3. The use of the double hook for elevating the upper lid and the depression of the lower lid by the first finger of the assistant's right or left hand respectively, are substituted for the speculum. (See Figure 2.) With a trained assistant who is intent on his duties and does not permit himself to be distracted for a moment, this method may be superior to others, but the commissure is not wide, the position of the hook must be slightly changed as the incision is being made, and when the eyes are deep-set, the field of operation is too small. My own preference is for the speculum until after the iridectomy, and the elevator for the dislocation and expression of the lens. Thus pressure on the ball at the critical moment is avoided, disastrous contraction of the lids prevented, and the danger of vitreous escape lessened. The method adopted depends, however, more upon one's habit of operating than upon the actual superiority of either.

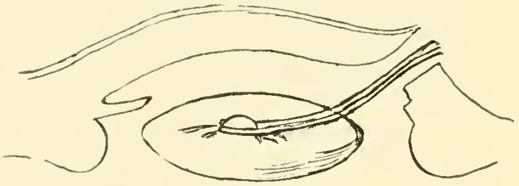

Figure 3. Forceps grasping the capsule.

4. The incision: The corneal section comprises one half or nearly one half of its diameter and it should be made in the corneal rather than the scleral limbus. The knife is introduced in an oblique direction, brought to the horizontal before making the counter puncture, thrust through at the corresponding point, and with the same thrust by lowering the handle, the nasal part of the incision is partly made. Two or three upward, sawing movements complete the section. There is no

particular disadvantage in the true corneal incision, provided the section is large enough to permit the easy passage of the lens. Healing is as prompt as when made in the scleral limbus and the tendency to sepsis is no greater.

5. Iridectomy: A small piece of iris is excised in almost every case. The exceptions are when the pupil is widely dilated and the excision of a piece of iris to facilitate the escape of the lens, seems superfluous. This step of the operation presents nothing unusual.

6. The removal of the lens in its capsule: Two pairs of forceps should be available, the larger for dislocating the lens after iridectomy, the smaller for the simple operation. (See Figure 3.) It may happen that the former slips over the lens and will not grasp the capsule, and before resorting to the cystotome or toothed capsule forceps, the effort is made to dislocate with the latter, and often successfully. Occasionally the manipulations have lessened the resisting power of the capsule and it ruptures, either while the lens is still lying in its fossa or while being expressed. This accident is not in any sense a serious one, the operation proceeds exactly according to the usual noncapsular extraction method. For example, in one case both forceps failed to dislocate and the smaller pair tore out most of the anterior capsule and the lens was readily expressed; in another, the lens was dislocated with much difficulty and the use of both forceps; in an immature choroidal cataract the lens seemed to be bound down and could not be dislocated. The corneal section was enlarged with iris scissors and a thin flat nucleus was expressed, leaving much cortex. In a woman of seventy the lens was swollen and the anterior chamber shallow; incision entirely corneal; no iridectomy because the iris could not be grasped; dislocation impracticable; a small piece of anterior capsule was torn out and the lens and cortex perfectly expressed.

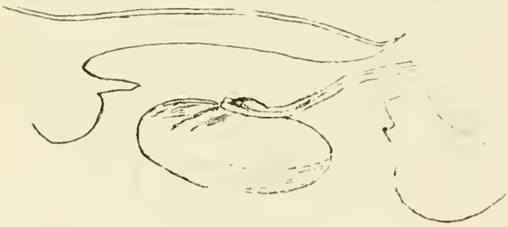
Figure 4. Lens rotated laterally.

7. Dislocation of the lens: This procedure consists of four distinct movements as follows: Two lateral, the first indifferently nasal or temporal, forcible enough to bring the lateral periphery into the area of the dilated pupil; downward and finally upwards and forwards. (See Figure 4.) By the last movement the superior periphery is brought close to and in line with the corneal cut. Expression is performed with the spoon below and spoon or spatula on the sclera behind the cut. The spoon is applied to the lower vertical meridian of the cornea just above the limbus and the first pressure is directly backward in order that the superior periphery of the lens may present at the section. The spoon is now shifted to the lower limbus and the lens gently and uninterruptedly expelled.

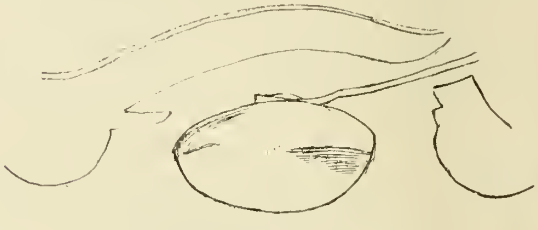
Figure 5. Lens rotated laterally.

8. The toilet presents nothing unusual.

9. The final step is to draw the conjunctiva by means of the threads over the upper third of the cornea and to knot them. Both eyes are bandaged and the patient put to bed.

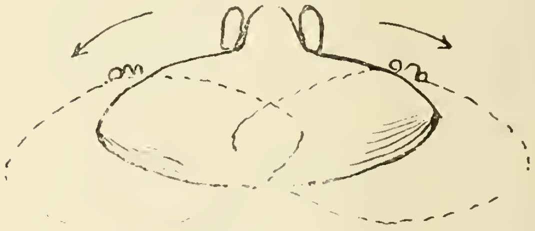
Figure 6. Three positions of lens.

Two comprehensive conclusions seem justifiable. First, Stanculeanu's operation is to be recommended only in uncomplicated senile cataracts, both mature and immature. Second, it is not adapted to the extraction of hypermature cataracts.

ORIGINAL ARTICLES.

THE SIGNIFICANCE OF INCREASED TENSION OF THE EYEBALL.

BY SAMUEL D. RISLEY, M.D.,
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(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

There is probably no other symptom of ocular disease which, to the thoughtful ophthalmic surgeon, is so significant of a long and important chain of pathologic events, both systemic and local, as increased tension of the eyeball. At one end of the chain is the distending myopic eyeball of childhood, at the other the glaucomatous eye of after middle life. Given at the start in life congenitally astigmatic eyes with or without the frequently associated abnormalities of binocular balance: force upon them the requirements of the educational process, and we have the group from which are recruited the myopic eyes. I have shown* that such eyes break down under the school work and become myopic through the axial distention of the globe, the change being invariably attended with well-defined pathological conditions in the uveal tract. These changes are characterized by hyperemia and a fluffy, flannel-red fundus, to be followed by a honey-combed condition of the choroid and a crescent or conus at the temporal margin of the optic nerve due to absorption of the pigment epithelium of the uvea. In a word, these are the early changes, which, if uninterrupted, eventuate in the well-known posterior staphyloma or distention backward of the globe and the more or less extensive choroidal atrophies of high myopia. In many cases the distention occurs in the anterior segment of the globe with a corresponding thinning of the ciliary region of the sclera and changes in the ciliary portion of the uvea; and probably also changes of curvature in the cornea. The distention however may progress *parra passu* in all the diameters of the globe with steadily advancing pathologic change in the entire uvea and impaired nutrition of the vitreous body. The large myopic ball with pearly-white or bluish sclera with dilated anterior ciliary arteries and veins is a familiar picture to every ophthalmologist.

The pathological picture, as I conceive it, is that the act of vision in the presence of a congenital astigmatism or faulty binocular balance is difficult; that the constant or continued undue strain required to overcome the difficulty causes an abnormal hyperemia of the uveal tract with irritative or inflammatory changes in that membrane, accompanied by increased secretion and therefore of increased intraocular contents; that the nature of the secreted fluids is probably more or less changed in character and is therefore less freely excreted by the drainage channels of the eye than in health; that it is probable that the pathologic changes in the uvea in the ciliary region, at the *ora serata* and in the region of the optic nerve have impaired the function of the filtration channels; that as an end result of this chain of events we have retained contents and increased tension of the ball; that in childhood and youth the still tender sclera stretches either uniformly in all its diameters, or chiefly in the anterior segment of the globe or bulges backward at the temporal margin of the optic nerve. It has come to be an ophthalmic aphorism that youth is the danger period for progressive myopia, but glaucoma of rare occurrence. It is equally true that glaucoma at any age is relatively rare in myopic eyes. Dr. Shumway and Dr. Randall have, however, each reported cases of myopic eyes which in early life had become glaucomatous and after enucleation deposits of pigment in the canal of Schlemm had been found. I have seen in consultation one case presenting the typical phenomena of glaucoma in high myopia. It is well known that the above described changes in the uveal tract are more rapid and are more liable to occur in individuals suffering from impaired general health and faulty metabolism.

At the other end of the chain, that is to say in adult life, we also have disease of the uveal tract, due primarily either to a wide variety of purely local causes or associated with and more or less dependent upon a considerable group of systemic conditions but with the associated phenomena of glaucoma. At first sight the progressive myopia of youth and the glaucomatous eye of after middle life, from all points of view, seem as widely separated as possible. The age of the patient, the apparent etiologic factors, the clinical history and the symptom complex are all divergent. Indeed in all these respects except one they are essentially different, but are nevertheless because of this exception drawn into the same category by the presence of uveal disease and increased tension of the globe. The sequela of an etiologic factor common to both are divergent because of the age of the patient.

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*Article, School Hygiene, Vol. II., System of Diseases of the Eye, Norris and Oliver, J. B. Lippincott and Co., Philadelphia.

In youth the increased intraocular pressure is relieved by distention of the still soft and readily distending sclera and such eyes are therefore comparatively free from pain. In the eye past middle life, not only has the sclera become tough and resisting but the formation of connective tissue in the uvea consequent upon long-standing and continuous, or it may be recurring, irritation with its attendant hyperemia or inflammation, consequent upon eyestrain or due to some general dyscrasia or recurring infection, has led to pathologic conditions in the uvea which impair the important function of that membrane over the nutrition of the globe in many conceivable ways. The increased secretion from the congested or chronically inflamed uveal tract, doubtless also changed more or less in quality, overwhelms the drainage system of the eye, the function of which has probably been impaired by disease; the contents of the globe increase, tension arises above normal and the sequelæ are pain and impaired function. The symptom complex we know as glaucoma. These statements demand a more concrete study. That the eyeball may distend as the result of uveal disease, even in adult life, I have many times had the opportunity to verify. A single example will be sufficient for my purpose.

A gentleman, aged forty-five years, had worn by my advice comfortably for many years +1.50⌒+.75 cy. ax. 90°, which gave him normal acuity of vision for distance. At forty-five years of age he began having attacks of rheumatism of a chronic type affecting the joints. In one of these recurring exacerbations he had an attack of mild choroiditis with vitreous infiltration, finally resulting in a violent attack of iridocyclitis with great and protracted suffering and increased tension of the globe. He recovered after a prolonged and tedious convalescence with normal acuity of vision but his hypermetropic astigmatism had disappeared and in its stead myopic refraction and permanent well-disseminated choroidal changes. For several years he suffered from recurring attacks of mild iridocyclitis, usually associated with rheumatoid affection of the joints, but mydriasis had been successfully maintained throughout these attacks, so that at no time had posterior synechiæ formed. That is to say at no time was the anterior chamber excluded by annular posterior synechiæ.

I have introduced this case briefly because it illustrates so well my thesis; *viz.*, that increased eyeball tension is a symptom or manifestation of uveal disease. In a relatively small group of cases, it may be local in origin; as for example when it occurs as a sequel to corneal disease, to perforating ulcers of the cornea and certain traumatisms such as infected perforating wounds. In the vast majority of cases however it will be found that the uveal disease is one of the local expressions of the diseases of general nutrition, infections and toxemias. I have elsewhere[1] epitomized my views as follows:—

"If we pass rapidly in review before our minds the considerable group of ocular conditions which either culminate in increased tension or threaten to do so, we will be impressed by certain significant facts. For example, if we consider the atypical forms of glaucoma—(*a*) the buphthalmic eye of infancy and young childhood; (*b*) the cases of serous iritis; (*c*) chronic, recurrent iritis of the plastic type; in each we find increased tension, seriously impaired acuity of vision and when possible to determine it, a contracted field; and in the laboratory cupped optic nerve, frequently the signs of an optic neuritis, choriocyclitis, iritis, atrophied and contracted ciliary muscle, dilated ciliary vessels, a degenerated vitreous body and an opaque lens. To these may be added marked changes in the region of the scleral ring.

"Another atypical group is constituted by (*a*) perforated cornea from corneal ulcer leading to partial corneal staphyloma, empty anterior chamber, iridocyclitis, increased tension and loss of vision, or, by perforating and infected wounds. In the laboratory cupped optic nerve, inflamed and swollen; turgid or atrophic ciliary muscle, dilated ciliary vessels, degenerated vitreous and opalescent or opaque lens, and by connective tissue changes throughout the uveal tract.

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[1] Trans. Am. Acad. of Ophthalmology and Oto-Laryngology, 1913.

"Approaching the usually regarded typical forms, that is to say, the so-called primary glaucoma, our minds at once revert to their usual grouping: (*a*) Glaucoma simplex or the so-called noninflammatory type, regarding the nature of which there has been so much discussion. (*b*) The subacute inflammatory type; beginning with transient impairment of vision, recurring attacks, increasing in severity and with briefer intervals between the exacerbations, the inflammatory features and pain meanwhile growing more pronounced; the anterior chamber shallow, the cornea steamy, the iris atrophic; the impairment of vision, the contraction of the field and increased tension at first transient but becoming permanent. The anterior perforating vessels (long anterior ciliaries) become permanently engorged; and from the first the transient attacks are associated with impaired range of accommodation, because of the pathologic condition in the ciliary region. If neglected, total blindness ensues and the disease passes into a stage of absolute glaucoma. In the laboratory is found a deeply cupped, atrophic optic nerve, atrophic ciliary muscle with evidence of preceding inflammation, dilated ciliary vessels, degenerated vitreous body, opaque lens; invariably both eyes in near sequence are involved. (*c*) The acute inflammatory type, more violent from the onset, the final result as set forth in the former group rapidly consummated and the same laboratory findings in more exaggerated form. (*d*) The so-called hemorrhagic glaucoma with cardio-vascular disease, constituting one of the most striking and hopeless forms of disease with which the ophthalmic surgeon meets."

In any large ophthalmic clinic abundant material is afforded for the study of the eyes included in this grouping, not only their clinical features but the pathological finding in the laboratory. I have a large number of eyes belonging to this group which came to enucleation and were subjected to careful laboratory study. One of these studies was made by Dr. Harold Goldberg, then curator of the Wills laboratory, of an eye primarily affected by a corneal ulcer which destroyed useful vision. Many years later the man came with a stony-hard ball and severe pain. Aside from the peculiarly interesting corneal conditions which led to its presentation before the American Ophthalmological Society in 1907, the conditions found in the uveal tract are of especial interest in the study of the pathology of increased tension. The pathological report is too long for insertion here but summarized it showed a complete destruction of the uvea, pigment heaping, blood vessel changes and the excretion channels closed by connective tissue.[2] This led to careful laboratory study of all eyes which had been enucleated for a great variety of causes where the clinical features included increase of tension. The laboratory reports made by Dr. Goldberg and Dr. Brinkerhoff, curators of the museum at the Wills Hospital, are herewith appended. One of the cases is of especial interest because of the cupped nerve and posterior staphyloma notwithstanding the fact that no plus tension had been noted in the clinical history and the glaucomatous features had not been suspected.

Increased tension of the globe assumes at once a wider significance when regarded as a symptom and sequel of disease affecting the choroidal tract and must modify in many important respects the views underlying our treatment. The term glaucoma falls from its place as a clinical entity in our catalogue of ocular diseases and must be regarded by the ophthalmic surgeon as only a convenient appellation for an important and characteristic symptom of ocular disease, but not the disease itself. The acceptance of this view has for many years modified my own concept of glaucoma and controlled my management of eyes with increased tension. The failure to recognize its etiologic significance has doubtless led to the early adoption of surgical interference at a stage of the disease when other measures should have been first employed. By way of illustration, attention may be called to the great value of iridectomy in the treatment of chronic recurrent iritis, but no experienced surgeon would think of adopting this valuable surgical procedure during an acute exacerbation. The same consideration should be the guide to treatment in those cases of uveal disease with a cataractous lens or in which the increased tension of the globe is the dominant symptom. In short, it is obvious that the underlying etiologic factor both local and general should be considered and as far as possible removed before the adoption of any surgical procedure. The failure to do this affords sufficient explanation for the unfortunate sequelæ so frequently following either iridectomy or any of the more recently devised operations for the relief of increased tension, by securing permanent drainage from the globe. Notwithstanding the extensively published experience with these modern procedures, I am not convinced that the mere fact that permanent drainage has been secured through an opening at the sclerocorneal limbus is a cure for the diseased condition of the globe culminating in increased tension.

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[2] Am. Oph. Soc., 1907.

In no other form of ocular disease, inflammatory in character, has the ophthalmic surgeon been so prone to undertake operative procedure as in inflammatory glaucoma. This has seemed to be justified by the rapidly fatal results to vision if relief of high tension were delayed.

But if the contention of this paper is true, the early recognition of the essential nature of the disease and the adoption of suitable methods of treatment will, in the vast majority of cases, prevent the violent culmination we all know so well. I can recall but two instances in my own practice which reached this fulminating stage of the disease while under observation, and these occurred in my early experience. Both cases were under treatment for hemorrhagic retinochoroiditis when first seen, but no recognized increase of tension. In each case, sudden misfortune fell and in the midst of their sorrow, the ocular affection associated with disease of the general vascular tree culminated in hemorrhagic glaucoma.[3]

It is a well-known fact that a very large percentage of the patients who apply for treatment with transient attacks of the symptom complex, designated as "glaucoma imminens," are relieved by the instillation of miotics, especially eserin, and operative measures are not required, if at the same time suitable attention is given to the underlying etiologic factors usually found in general systemic states.

The problem to be solved however is a very different one if the disease has advanced, either through neglect or in spite of treatment, to a stage where permanent pathological changes in the intraocular membranes have impaired the nutritive functions of these membranes and the drainage channels of the globe have been more or less permanently blocked by connective tissue formation; when the ciliary body is undergoing atrophy and the contracting adhesions have dragged the root of the iris backward and in contact with the scleral ring; we are then, in my judgment, no longer justified in trusting to the influence of miotics. When we come to consider the physiological properties of the most efficient of the miotics, the physostigmin or eserin, it will be seen why this statement is true.

In answer to an inquiry, "How or why does eserin relieve intraocular tension?" I recall two experiences which have afforded, to me at least, a satisfactory explanation. A young woman with a leukomatous cornea and a blind eye came to the clinic complaining of pain; the old leukoma which had been for years entirely white and free from irritation was vascular, the ball tender to palpation and with increased tension. A solution of eserin was instilled; at the close of the clinic hour the blood vessels in the white cornea were no longer visible except with the loup; the pain had disappeared and the tension was normal. A short time after a young man presented himself for treatment, giving a vague history of discomfort, occasional attacks of redness in one eye. Inspection showed an arborescent arrangement of blood vessels over the anterior surface of the entire iris. Having in mind the speedy disappearance of the blood vessels after the instillation of eserin in the case narrated above, eserin was instilled and the patient received a solution to be used at home. On his return the following day the vessels were no longer visible to the unaided eye. The effect of the eserin in these two cases was ascribed to its influence over the muscle fibers in the walls of the blood vessels.

At that time and even now there is much confusion over the physiological properties of this drug, but all experimenters seem to agree that the well-known rise in blood pressure after the administration of eserin is brought about by the stimulation of the muscular coat of the arterioles; that physostigmin increases the irritability of both striped and unstriped muscles even causing tetanoid contractions, the effect apparently being due to the stimulation of the peripheral nerve endings. Local applications it is claimed causes marked contraction of the pupil by stimulating the peripheral endings of the oculomotor nerve and probably also the iris muscle itself and causing the spasm of the accommodation by acting similarly on the ciliary muscle.

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[3] "Hemorrhagic Glaucoma," Trans. Pan-Am. Congress, Sept., 1893, and reprinted from *Univ. Med. Mag.*, Nov., 1893.

Now if these observations are correct, eserin is useful in the conditions which have been described as characteristic of the glaucomatous eye by contracting the uniformly dilated ciliary vessels in all of their ramifications in the iris and ciliary region. In this manner the hyperemia would be reduced, the secretion diminished and the general turgescence of the swollen ciliary body and ciliary muscle relieved. The instillations of solutions of suitable strength frequently repeated should therefore, reasoning *a priori*, be of great service in the premonitory stages of increased tension and should hold in check the pathological processes which culminate in increased tension of the ball. The mistake of using too strong solutions of eserin is often made. It should never cause pain as this is an indication of muscular spasm or cramp; weak solutions frequently repeated are more useful and are often of great value in the treatment of iritic and ciliary inflammation in alternation with the mydriatics. But where these permanent changes have already occurred, while its use may in some measure retard the progress, it is obvious it can not remove or permanently arrest the baneful influence of the permanent pathologic changes at the root of the iris at the scleral ring. The effect of these contracting adhesions between the anterior prism of the ciliary body, the root of the iris and the scleral ring is analogous to the irritating influence of synechia between the capsule and iris after the extraction of cataract, or anterior synechia after perforating ulcer of the cornea and in certain cases of iritic adhesions. It is a common experience that such eyes remain irritable and show a tendency to recurring attacks of inflammation, which subside after the release of the adhesions.

In like manner the tendency to irritation and recurring attacks of increased tension will not permanently subside until the contracting bands of adhesion between the ciliary body at the scleral ring and root of the iris are released. To accomplish this design I know of no procedure which will release these bands through so considerable an arc of the periphery of the iris as a correctly performed broad iridectomy. It is open to question whether the securing of a drainage wound is correct in principle. Iridectomy however should not be undertaken until by suitable local and general treatment the acute inflammatory manifestations have subsided and this treatment after iridectomy should be continued until the patient has recovered from the uveal disease.

LABORATORY REPORT BY DR. GOLDBERG AND DR. BRINKERHOFF.

The following cases were selected from the laboratory records of the Wills Hospital, as illustrative of certain points in connection with the study of glaucoma. They are perhaps not specimen cases in every sense, but it is hoped they will serve the purpose for which they are intended.

The principal feature of interest about this group of cases was found in those in which marked connective tissue changes were taking place in the ciliary region. These changes varied in extent from a proliferation of the fixed elements, in the muscle body of the ciliary body, to extensive hyperplasias involving the entire region included in most operative procedures for the relief of glaucoma. In so many cases a natural physiological effort seems to have been put forth to establish an external communication by means of new blood vessel formation that it leads one to suspect that these connective tissue changes are regenerative, and that they have for their object what surgeons have long been attempting, to find a balance for the exchange of the fluids, intra- and extraocular. That this process fails in many cases is indicated by those we see of well-established glaucomas that reach the laboratory; but that it succeeds much more often than is suspected by the clinician is quite manifest by any number of specimens, in which all the changes of glaucoma are present in eyeballs enucleated for other causes, and which in the history of the case there is no evidence of glaucoma symptoms ever having been noted. Everyone knows that the connective tissue proliferations in a blood vessel tract are much more complete and rapid in their progress than elsewhere. In the operative region of the eye, we have at least two types; the blood vessel type, as represented by the iris and ciliary body, and the fixed dormant type of the cornea and sclera. The difference in these types through which we proceed in operative technic would perhaps account for the successes and failures in the completeness or incompleteness of the operative procedure. From this evidence it seems reasonable to assume that the operative procedure including the removal of a portion of the blood vessel type, would prove more successful, because in the healing of such a wound the process is checked at once, there being histologically nothing more to accomplish. Whereas, in the procedure involving the removal of the dormant type, the healing process has yet to be attempted before complete regeneration has taken place.

CLINICAL DIAGNOSES.

1. Glaucoma; chalky lens. There was found a papillary condition of the corneal epithelium at the corneoscleral margin, the body was pedunculated, united to the underlying cornea by areolar connective tissue. The epithelium has invaded the substance in many places. There is new blood vessel formation in this region; apparently an effort to establish an external communication. General connective tissue proliferation throughout the uvea, with fibrocicatricial blood vessel changes. The fibrous changes are at a late stage, and are especially well marked beneath the pars retina. Fibrous changes are also marked throughout the retina, with the presence of colloidal bodies and calcareous granules. Bands of fibrous tissue are found isolated in islands of amorphous pigment. Red blood cell masses are found in the vitreous containing fibro-connective tissue cells. Some of the retinal blood vessels are six or seven times their normal caliber, and are composed almost entirely of pure fibrous tissue. It is notable that in these locations the retina shows its best structure. There is a complete atrophy of the nerve by hyperplasia of its connective tissue elements.

2. Intraocular growth; secondary glaucoma. General proliferation of connective tissue elements of choroid. (Sarcoma.)

3. Gunshot wound; secondary glaucoma, sympathetic irritation. Complete destruction of lymphatic system by fibro-connective tissue changes. Giant cells and epithelioidal cells present.

4. Chronic ulcerous keratitis; cataract, secondary glaucoma. Connective tissue proliferation, especially well marked at drainage points.

5. Secondary glaucoma. Complete destruction of uvea by fibro-cicatricial change.

6. Absolute glaucoma. Obliteration of angles by fibrinous exudate, beginning connective tissue changes.

7. Hypopyon keratitis; glaucoma. Complete destruction of choroidal pigment by connective tissue cell proliferation.

8. Bullous keratitis; glaucoma. Evidence of old choroiditis; plastic changes.

9. Iridocyclitis; secondary glaucoma. Connective tissue cell proliferation throughout uveal tract.

10. Chronic uveitis; proliferation of fixed connective tissue elements and new blood vessel formation at corneoscleral juncture. Angles free, Schlemm's canal engorged with blood, and lymph spaces filled with leukocytes. Proliferation of pigment connective tissue in choroid and plastic exudates. Marked cupping of nerve, with atrophy; choroid in this region is dragged to one side as in high myopia.

11. Chronic iritis, annular synechiæ, sympathetic irritation; glaucoma. Choroid atrophic, vessels shrunken, ciliary bodies show beginning hyaline change.

DISCUSSION.

DR. G. B. JOBSON, Franklin: Hamburger states that increase or decrease in blood pressure results in temporary alteration in ocular pressure. This being the case I believe that in any operation for glaucoma, if blood pressure is high it should be reduced, as sudden lowering of ocular tension by opening the eyeball will subject the patient to grave danger of hemorrhage.

I am pleased to hear of the stand taken by Dr. Risley in being too often carried away with operative procedures in lieu of the use of miotics. My reason for this opinion is that two eyes upon which I operated by the Elliott method, were lost, one by infection ten days after operating. The other was in a man seventy years old who had (according to his description) three acute attacks during the past year. Three weeks ago he came under my care, and hemorrhagic retinitis was noted. The week following, acute glaucoma set in. The patient refused enucleation and the Elliott operation was done. In about two minutes blood welled into the eyeball and it will no doubt have to be enucleated. Blood pressure is 200.

THE PRESENT STATUS OF OUR KNOWLEDGE OF SHOCK.

BY JONATHAN M. WAINWRIGHT, A.M., M.D.,
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(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The question of shock is rapidly reaching an almost metaphysical basis. Unless we general practitioners are careful we shall soon be in the same nebulous state, in regard to a subject vitally affecting the very lives of our patients, that we now are when addressed by the serologist whose language even we understand but poorly.

A short time ago we knew nothing of shock except its gross clinical manifestations. Our treatment was correspondingly far from effective if not indeed harmful. Within the last few years a vast amount of work has been done both in the clinic with improved methods of observation and in the purely scientific laboratory. Many facts have been assembled and many theories evolved. Nearly every theory is at more or less complete variance with all the others. Indeed, as is often seen in debated points in medicine, one author will detail an elaborate series of experiments to prove his theory and another will accept all the data of the first, but will show that it is his own theory, exactly opposite, that they prove.

No single phase of shock can be discussed adequately in this brief paper. We shall only trace the progress of our new knowledge and attempt to discover what can be turned to practical use.

The first serious scientific studies of the cause and nature of shock were begun by Crile in the early nineties. The basis of Crile's teachings is that shock is caused by nerve impulses reaching the brain from the seat of trauma or operation. Long continued impulses finally exhaust the vasomotor centers. With exhaustion of the centers comes dilatation of the peripheral vessels. Blood pressure falls and in direct proportion to the fall of blood pressure there appears the clinical manifestations of shock. The heart is not at fault and will fail only if the pressure becomes too low. If blood pressure is raised before death supervenes, the heart will continue unaffected.

Crile's work stimulated many other studies which are still continuing in clinics and laboratories. The result has been mixed. Most clinical observers confirm Crile. Laboratory workers especially have failed to agree or as the result of their own studies have reached new conclusions either partially or wholly at variance with Crile.

Porter, for instance, finds that nerve stimulation for hours can not cause shock. He finds that the vasomotor center continues active in shock and that the peripheral vessels are contracted. When two such distinguished scientists come to conclusions which are mutually exclusive the casual bystander may well feel perplexed. But this is not all. Howell accepts vasomotor exhaustion as a partial factor but adds a cardiac exhaustion which may accompany the former or may be the sole factor.

One author, after an elaborate series of experiments, determines that the peripheral vessels are contracted. A second, after equally elaborate experiments, determines that they are dilated. A third repeats the experiments of the former two and does not get any evidence for either side. Some experimenters still cling to cardiac inhibition. Meltzer considers shock due to inhibition of everything, a hogging of the whole proposition which according to his confreres places Meltzer on the unfair list.

Henderson believes that shock is due to the loss of carbon dioxid from the blood and tissues, "acapnia."

The most recent elaborate study that we know comes from Mann at Indiana University. Mann after many experiments, outlined in a well considered paper, concluded in substance as follows: An anesthetized animal can not be reduced to a state of shock by any degree of sensory stimulation provided that all hemorrhage is prevented and the abdomen is not opened. He eliminates acapnia. Depression of the heart respiration or vasomotor centers is not the cause. Moderate general anesthesia prevents pain impulses from affecting higher centers and nerve blocking is unnecessary. For Mann, shock is caused "by the tremendous loss of red cells and fluid from the blood due to the reaction of the great delicate splanchnic area, —to irritation and acute inflammation of the peritoneum due to trauma and exposure to the air and changes of temperature." It would appear, according to Mann, that shock without an open traumatized abdomen is an impossibility.

It would seem a hopeless task to attempt to harmonize these contradictory laboratory findings and the theories that are drawn from them.

Nevertheless, as clinicians, we imperatively need definite ideas and more particularly definite plans of action in preventing or treating a condition immediately threatening the very life of a patient. This is truly the vital point of the question.

Fortunately, since the introduction of the blood pressure apparatus, clinical surgery, to an extent at least, can stand on is own legs and, while always welcoming any assistance from the laboratory, it has from its own resources established the practical value of certain principles. For instance, a surgeon working by the older methods does a severe abdominal operation with regularly repeated blood pressure readings throughout. As the operation progresses the pulse gradually becomes more rapid and weaker, the respiration becomes more rapid and shallow, the face becomes more and more pale, the well-known clinical picture of shock gradually deepens and always with it the blood pressure readings gradually sink lower as the picture progresses. Or, a patient is admitted to the accident ward in deep shock after a crushing injury. The old classical symptoms are all present and again the blood pressure is low. Both cases are without appreciable bleeding.

If recovery takes place, the blood pressure rises with the other improving conditions. When the patient has recovered clinically, the blood pressure is normal. This will happen so constantly to the surgeon who will but look to see, and the details have been published so often and by so many different observers that no matter what the laboratories may show we must accept our own proof that, at least with our human patients after injury or operation, the essential phenomenon of shock is a low blood pressure. Maintain blood pressure and shock does not appear. Crile's statement that the control of blood pressure is the control of life itself is as true to-day as the day it was made, and regularly repeated blood pressure readings during a serious operation are absolutely essential to the proper safeguarding of the patient's vital forces.

Again, go on by the older methods with the severe abdominal operation or the high amputation of the thigh and send the racked and tortured human mechanism back to its bed. What is the picture? A patient deathly pale with a cold clammy skin; weak, rapid pulse; rapid, shallow, irregular respiration; low blood pressure; sensation slow in returning if it returns at all. Do this same operation with a non-depressing anesthetic and temporarily eliminate the operative field from the patient's mechanism by a local anesthetic and now see the picture. The patient is conscious, relieved and happy in a few minutes. There is no pain. Pulse, blood pressure, respiration, etc., are the same or better than on admission. Here, again, is a contrast always to be seen by whoever will look for it, and here again exact clinical data have been published by so many clinical observers that the only ones who fail to see are those who fail to look.

From these two principles, that is the blood pressure and nerve blocking, has grown Crile's wonderful system of anoci-association. We have tried to indicate above that the foundation of this system is clinically absolutely sound. Anoci-association is the logical culmination of all the work that has preceded. Finally, careful attention to anoci-association will produce proof that can not be contravened in a thousand laboratories, especially warring laboratories, and that is a lowered operative death rate.

To illustrate the value of anoci-association I append a table of all our hysterectomies operated on since the adoption of the necessary technic in our operating room. The hysterectomies are chosen as they represent the largest series that we have of abdominal operations which were often attended by considerable shock with the older methods.

Reference to this table will show that the pulse rate on the evening of the operation is either practically the same or lower than it was before. This holds with the exception of two cases, No. 8 and No. 10. In case No. 8 the operation was for a very foul sloughing fibroid. Infection of the peritoneum took place during its removal from which the patient died three days later. It is the commencement of peritonitis that is indicated in the increased pulse rate the evening after operation.

Case No. 10 was that of a lady of extreme nervous temperament who had been under the care of a physician more or less constantly for two or three years. She was supposed to have hyperthyroidism or some cardiac neurosis and had often had a pulse rate of 150 for considerable periods before her operation. The increased pulse rate in her case was certainly due to her neurotic diathesis. Uninterrupted recovery followed.

Making these two perfectly legitimate exceptions, the average pulse rate for seventeen hysterectomies the evening before operation was 89; the average pulse rate the evening after was 80. These patients were all operated on in the morning and the record after operation was for the evening of the same day. Some of these patients were very much exsanguinated by prolonged hemorrhages and some had very large tumors, the largest weighing four and one half pounds.

The value of the method by which a series of seventeen such severe cases can be operated on with an average pulse rate of nine beats lower than before operation is incontestable. This table itself does not, of course, offer anything new as similar results in a larger and more varied series of cases have many times been published by Crile and others. This table is, however, of interest in showing that the method itself works just as satisfactorily in the hands of surgeons who do not possess the wonderful dexterity or the wonderfully organized clinic of Crile.

	Pulse Rate	on Evening.
Number.	Before Operation.	Day of Operation.
1	88	72
2	84	84
3	100	84
4	88	88
5	70	72
6	82	80
7	100	78
8	78	102
9	82	76
10	72	130
11	80	72
12	88	72
13	80	80
14	90	96
15	104	88
16	96	88
17	96	84
18	88	88
19	100	76

DISCUSSION.

Dr. Loyal W. Wilson, New Castle: When there is an injury to the abdominal viscera causing rupture of the bowel or liver the shock is extreme at first and shortly following the patient reacts to a certain extent showing some improvement which may cause you to delay operation and further endanger the life of the patient. Operation should be performed early if you hope to save the patient.

Dr. Edward Martin, Philadelphia: Dr. Wainwright's communication, pleasantly touched by a kindly fling at physiologists and their intricate terminology, doubtless designed, as is our own, if not to conceal, at least to veil an essential ignorance, is timely from the fact that it clearly and unmistakably expresses the author's conviction that shock, as we see it in surgery, is due to sensory impulses and that it may be avoided by the ablation of these impulses, and that by the adoption of a general anesthesia, supplemented by a local one as practiced by Crile, shock will disappear from the list of complications treated by the operative surgeon, providing of course we take due measures against hemorrhage, chilling of the surface or poisoning by injudicious use of the anesthetizing drugs.

Moreover he has recorded a series of cases which he believes justify his conclusions, in that after a formidable operation the pulse rate was no higher, indeed often lower than it was before operative procedure. As a proof of his contention this tabulation would have greater weight were it contrasted with another in which the patients were operated upon by the same technic and with the same general anesthetic administered with equal skill, but without the addition of local infiltration. Indeed the only objection to Crile's practice is founded on the belief that the local anesthetic employed, to wit, novocain with quinin and urea, constitute an added trauma to tissues without compensating benefit. Moreover as used the injection is not made with the same minute care needful for the inhibition of all sensory impulses. The fluid is driven in swiftly, but with the patient not under a general anesthetic he would certainly suffer. A logical application of the method would be time-consuming and perhaps would distinctly delay the definite healing of wounds.

Under nitrous oxid supplemented by morphin and one of the belladonna preparations the patient is so habitually returned to bed without pulse hurry or other signs of systemic jar that the profession still remains with an open mind concerning the advisability of supplementing this anesthesia by local infiltration. Without rejecting entirely the procedure we remain unconvinced as to either its need or its large service.

Perhaps the most promising line of investigation concerning the etiology of shock is that directed towards determining the part played in its production by the adrenals and their secretion. Sweet has been particularly active in this line of investigation and since it is shown that these ductless glands are under as direct nervous control as are, for instance, the salivary glands he believes, and supports this by experimental evidence, that shock is largely a manifestation of depressed adrenal function. This view is reinforced somewhat by the fact that adrenalin is one of our most valuable remedies in shock and furthermore that the drug strophanthin, as advocated by Richards by intravenous injection, which acts directly upon the adrenals stimulating their secretion, ranks in value far beyond camphorated oil, indeed any of the half dozen preparations habitually injected into patients.

It is difficult from the standpoint of either sensory stimuli or adrenalin insufficiency to explain the instantaneous shock incident to a blow upon the head. A person who has brusquely differed in opinion with a policeman, for instance, when he receives the too convincing argument in the form of a locust club, exhibits two conditions, one insensibility providing the blow has been sufficiently gauged; the other, shock. The latter appearing in the form of motor collapse including the heart and blood vessels.

The child who has smoked his first cigar exhibits a similar motor collapse. The insensibility in this case being usually replaced by a bitter remorse, unfortunately as transitory as his shock. Terror has been shown clinically to produce a similar condition and with extraordinary rapidity. At least it would be extraordinary if deficiency in the adrenal secretion is to be regarded as the underlying cause of the symptoms.

It has been shown by physiologists that the adrenal content of the blood disappears with astonishing rapidity, but it seems inconceivable that it should do so at such a rate as to produce approximately instantaneous shock. It seems fair to regard the adrenals and alterations in their function as important, if not dominant, factors in the condition of motor collapse in which a patient is sometimes found after surgical operations and this concept suggests and justifies one of our most useful treatments.

Agreeing fully with Dr. Wainwright to the effect that shock, as a sequel to surgical operations, may usually be prevented, we are constantly confronted in hospital practice with the question of its management resulting from trauma. All physiologists and most clinicians have utterly condemned strychnin as being futile in small doses and toxic in large ones; in spite of this in many institutions it continues to be given as a routine. Reichert strongly commends cocain in moderate physiological doses as both a cardiac and vascular stimulant. Crile's work is based on clinical experience and therefore carries more weight to the profession at large than do the laboratory tests of the scientists. Hence we all believe in filling the blood vessels by enteroclysis if the symptoms are not immediately dangerous; by venoclysis in case of urgency, in the latter case supplementing the saline solution with adrenalin. Most of us believe in the administration of morphin. The only effect of this is upon the sensorium. It acts as a brain splint and to many its action seems more potent in arresting the progression of symptoms than any other single drug. On the basis of Richards' commendation strophanthin in one milligram doses hypodermically would seem next in importance to morphin and adrenalin. External warmth, elevation of the foot of the bed, moderate pressure upon the splanchnics, not enough to interfere with the respiration, and bandaging of the extremities to drive what blood remains in them to the centers would also seem rational procedures.

Dr. J. Stewart Rodman, Philadelphia: Whether or not we accept any of the available laboratory explanations as to the etiology of shock the clinical fact remains that shock is exhaustion. We know that fear, trauma, infection and chemical toxins produce exhaustion. Our duty is to prevent shock, as this may be done by applying the principles of anoci-association.

While ideally we should use nitrous oxid, as it is the least toxic anesthetic, it is too expensive to use routinely in most clinics. Fortunately we can use these same principles with ether anesthesia. Drs. Kaufman and Martin have referred to the value of morphin in treating shock caused by trauma. I should like to add that it is no less valuable in treating shock caused by infection. Since using morphin in this way I am sure that I have saved patients that otherwise would have died, particularly those of acute purulent appendicitis with free pus in the abdomen. I am also quite sure that since a visit to Crile's clinic in May, when I began to apply the principles of anoci-association, my general results have been better in every particular than before.

THE PRESENT PLACE OF VAGINAL HYSTERECTOMY IN PELVIC DISORDERS. SUMMARY OF FIFTY CONSECUTIVE CASES.

BY GEORGE ERETY SHOEMAKER, M.D.,
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(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Surgery of the upper abdomen has in recent years attracted a concentrated attention, as every new field does. Even when no symptoms call for it, many of us examine the gall bladder, stomach, duodenum and appendix, when an operation is done for a pelvic lesion. Theoretically, this is an excellent practice and in many cases necessary, but to the individual patient it may not be an advantage. It fosters a tendency to make abdominal incisions very extensive, following a Continental practice long discountenanced in America. It fosters a slipshod diagnosis. There is a temptation to do meddlesome surgery for indistinct indications. The opportunity to make this exploration is not a good reason for making an incision if there are no symptoms to call for it.

Granted that pelvic disease calls for the removal of some lower abdominal organs, the personal preference of an operator should not determine whether or not the operation should be done above the pubis or *per vaginam*, but rather in each case, the interest of the patient.

The greater ease for the operator by the upper route, its greater adaptability where there is an audience to be considered, the greater familiarity of many surgeons with it, has caused with some a neglect of vaginal methods.

When the symptoms have pointed to complications higher up, when appendicitis or other intestinal complications can not be excluded, when an accurate diagnosis can not be made, when there is a tumor present larger than a child's head, an abdominal incision is indicated. While large tumors may be removed by the vagina through morcellation, and while many complications may be inspected and dealt with by that route, even in the hands of experts the procedures become acrobatic, rather than surgical, and there is always an element of uncertainty as to what is left behind. There was, at one time, a wave of enthusiasm over this operation. The simpler vaginal operation of hysterectomy for carcinoma of the cervix was tried, but found to be unsuitable and it gave place to abdominal methods. In practiced hands, however, there remained for the vaginal operation in noncancerous conditions, an important field which time has not greatly altered.

Granted that hysterectomy by any route is to be performed, the vaginal technic presents certain advantages in the following groups:—

a. In very stout multiparæ with pendulous abdomens and relatively small disease areas low down. Here an abdominal incision must be very large, the field is very inaccessible through it and the cosmetic results are not good, the scar often forming a great depression when the patient is in the upright position. It is more difficult to secure firm union.

b. In clinically suspicious conditions or very early carcinomas, especially of the endometrium, thorough preliminary cauterization being done. The so-called precancerous conditions of the endometrium belong here. Where there is loss of weight, excessive and increasing average bleeding near the menopause, with a chronic irritating discharge, where curettings show as yet no positive malignancy, but certain suspicious findings, the uterus is better out, and better out by the vagina.

c. In certain cases of retroversion and descent in elderly women, with large cervix, diseased endometrium and very large uterus. Not all of these require hysterectomy, but it is no more formidable than the long and complicated resections and plastic work which would otherwise be necessary and which would after all, leave an endometrium of uncertain future.

d. Where no symptoms point to other organs and the disease is low down.

e. Where cosmetic results and future comfort are important.

f. Where, other things being equal, the route of the lowest mortality and lowest morbidity must be chosen. That route is vaginal in good hands. Probably because of woman's original adaptation to receive pelvic traumatism without shock, as in parturition, the invasion of the lower peritoneal cavity *per vaginam* and the necessary handling appear to disturb the normal balance less than an approach through an incision higher up.

g. When the preservation of the cervix and upper vagina are not important to that individual.

h. In stout women with poor heart and poor kidneys, who are not very good operative risks.

In the writer's hands, abdominal hysterectomy is the operation of choice in the great majority of instances. Analysis of a group of fifty consecutive vaginal cases shows, however, a considerable range of adaptability. Two of the patients died, but they were poor subjects for any operation. Both had chronic interstitial nephritis and were very fat. Both died of uremia on the tenth day. One, aged forty-nine, had had fourteen children; operation was for adenomatous uterus and dermoid cyst of ovary. The other had had severe hemorrhages at fifty-two years of age; microscopical diagnosis was carcinoma. In the latter case an error of judgment was made in adding plastic work, after the hysterectomy, as it required extra time and might have been done at a later date, making a two-stage operation. All the others recovered. Two or three of the cases may be briefly narrated.

Mrs. C., aged forty-seven, gave birth to one child, twenty years ago; never pregnant since. Menstruation was normal, until four months ago when it became profuse, with irregular almost daily bloody discharge, without odor. Patient was a typically healthy, well-nourished woman who had never been ill in bed; complained of bleeding and of a feeling as of descent of the uterus.

Examination showed that the canal measured five inches; the cervix was much hypertrophied, showed a denuded granulating patch; had been partly repaired after extensive lacerations. The large soft uterus was low and retroverted. It could not be brought forward because of moderate adhesions, though there was no induration in the pelvis. There was bleeding caused by bimanual examination.

Now there is a possibility but not a probability that this large soft scarred cervix was malignant, but its removal by some method was required if the patient was to be cured. Amputation of such a cervix, curetting for the diseased and bleeding endometrium, resection of the anterior vaginal wall, dissecting off and replacing the bladder, and repair of the endometrium would not protect against the probability of later cancerous change in the endometrium and might not correct the uterine hyperplasia and retroversion. The uterus is better out. Abdominal hysterectomy might be chosen provided the cervix were removed and plastic work done afterward. Vaginal hysterectomy with clamps leaves no visible scar in a woman who still cares for her looks. This was the operation chosen here. One ovary remains, one was removed.

The operation was followed by little reaction and no shock. Half an hour later the pulse was 72. Clamps were off in forty-eight hours; all gauze out in eight days.

Now this uterine cavity contained at least two ounces of soft gland tissue, and the endometrium at one point was decidedly indurated. The walls of the uterus were hyperplastic and contained several small fibromas.

The pathological report is: Chronic cervicitis. Chronic hyperplastic endometritis. Adenomatous polyps of endometrium. Myoma. Myometrium normal. No evidence of malignancy.

In my judgment only the examination of all the endometrium excludes malignancy in such a case and this is impossible from curettings. This is the kind of uterus which becomes cancerous at any time and is better out.

Mrs. S., aged thirty-nine, had had three births and six miscarriages. Menses formerly were normal but type changed in past eighteen months. Interval was shortened to three weeks; duration lengthened to seven days; number of napkins increased to five or six per day, soaked. Loss of weight was twenty pounds; now weighs 99½. Uterus was in complete retroversion, soft, flexible; canal so patulous as to painlessly admit cotton-wrapped forceps to fundus with a little bleeding following. There was a little variation in density at internal os; marked anemia. It was not possible to exclude early malignancy.

Now to this woman further childbirth would have spelled calamity. It would have required more surgery to correct the retroversion, repair the perineum, curet the endometrium, etc., with an uncertain outlook remaining. The uterus was removed. The pathologist reported no malignancy.

Mrs. B., at seventy-four years of age, had a very early carcinoma. It was thoroughly cauterized and the uterus removed. She is well, four years later. She was very short and weighed 185 pounds. Abdominal hysterectomy would have been difficult. (By the way, it seemed strange to those of us who knew Weir Mitchell's later work, to find that he had, many years ago, attended her in labor.)

Another patient, forty-four years old, had calcified bleeding fibroids. She was very obese. Excellent recovery.

In this list of operations, fourteen, or twenty-eight per cent., have a pathological diagnosis of fibroma.

Nine, or eighteen per cent., are classed as malignant. Practically all of the remaining fifty-four per cent. were operated upon for various forms of adenoma of the uterus, with hemorrhage, nearly all at or beyond the menopause.

It must be borne in mind that a microscopic differentiation between malignant and benign forms of adenoma can be made accurately only with the entire structure at hand, and the diagnosis of "not found" is of very little value when curettings are the only tissues examined. In my judgment, it is far better to err on the side of safety and remove a suspicious uterus, but it is of course necessary to exercise sound surgical judgment, otherwise many uteri would be needlessly sacrificed. These cases of vaginal hysterectomy occur among large numbers where only minor operations are done, or where the abdominal route is selected.

As to the operations for malignancy, the diagnosis, though previously suspected, in some could only be made after removal. Vaginal hysterectomy is not the best operation except in early carcinoma of the fundus without infiltration.

Well-marked carcinoma of the cervix when seen, is usually too far advanced for anything except cauterization, but if seen early enough should be operated upon by the abdominal route, supplemented if necessary from below. The cautery must always be used first.

While I believe this to be the judgment of the profession to-day, I am nevertheless impressed with the fact that with a very few exceptions of combined operation, the only patients now recollected, who have lived and remained well ten to eighteen years after operation for undoubted malignant disease of the uterus, have been a few private patients who have had vaginal hysterectomy, preceded by the thorough use of the actual cautery, and supplemented by such use of hysterectomy clamps as has resulted in necrosis and discharge of much parametrial tissue during convalescence. Without making any systematic tracing of all operations, I now recollect several cases of this type. The longest done was in February, 1896, or eighteen years ago, and the patient is still in good health. The pathological diagnosis of carcinoma was made by Dr. Henry Cattell. Another patient, aged fifty, with squamous epithelioma of cervix, pathological diagnosis made by Dr. Edsall, was operated upon in 1898. She was the widow of a physician. Examined fourteen years later, she was well. One patient, aged seventy-two years, with epithelioma of cervix, lived ten years longer and died of old age without signs of recurrence. Another, with carinoma of endometrium, operated upon fourteen years ago, is now well, her physician reports. Another was operated upon twelve years ago and is now in perfect health. Pathological diagnosis, made by Dr. Beyea, was malignant adenoma of endometrium. These patients were seen very early and were cauterized, or they would not have done so well.

In conclusion, as experience has increased, the vaginal operation is considered safer than abdominal hysterectomy. In my hands the patients are more comfortable and are better pleased afterward. It is especially adapted to precancerous conditions late in life. Those submitted to it require selection, as it is not adapted to all.

In a number of acute cases of frontal sinusitis marked relief was noted (because of the free rhinorrhea set up) from use of the solution: Mercuric iodid, 15 grs.; potassium iodid, 1 dr.; water, 3½ oz.—Macfarlan.

A REVIEW OF RECENT EXPERIMENTAL WORK UPON THE RELATION OF IRON AND THE IRON METABOLISM TO ANEMIA.

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(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

The discussions and experimental work of the last two decades concerning the relation of iron and iron metabolism to anemia have concerned themselves largely with the attempt to answer three questions:—

Can the iron required for the construction of tissues and in particular of hemoglobin be absorbed from iron administered in inorganic form or must it be derived from the organically combined iron of the food?

Does inorganic iron serve not as a source of supply for hemoglobin formation but as a stimulant to the blood forming organs and is this stimulant action the explanation of its therapeutic effect in chlorosis?

Does the spleen play any fundamental or essential part in the iron metabolism of the body?

When during the last half century analyses of the feces of patients and animals receiving inorganic iron by mouth revealed an early quantitative output of the iron administered, doubts arose as to the body's ability to assimilate inorganic iron and utilize it in blood formation. Most conspicuous among the skeptics was Bunge, who strongly supported the view that all iron to be used for constructive purposes must be derived from the intimately combined organic iron of the food. In a series of experiments in Bunge's laboratory on young animals, Häusermann[1] fed to one group a low iron diet; to a second group, the low iron diet plus ferric chlorid, to a third group, the low iron diet plus hemoglobin, and to a fourth group, a mixed diet of iron-containing foods. After from one to three months, he estimated the total iron and hemoglobin content of each animal and although his results were not uniform, concluded that ferric chlorid was not an available source of iron from which to construct hemoglobin, thus favoring Bunge's view. More extensive studies along similar lines three years later by Abderhalden[2] gave, however, different results. Abderhalden found that inorganic iron as well as hemoglobin and hematin added to iron-poor diets increased the hemoglobin formation although less effectively than a diet of iron-rich foods. From microchemical studies, he concluded that whatever be the form of administration, iron is always absorbed by the same channels, stored in the same organs and eliminated by the same routes. He noted that administration of food in which all the iron is in firm organic combination leads early to the appearance of ionized or inorganic iron in the intestinal tract and in a recent study, he has shown that the firmly combined organic iron of horseflesh is liberated by pancreatic digestion *in vitro* so that after eight days, the larger part of it is in ionized or inorganic form. He has suggested that possibly all iron assimilated by the body whatever its original source, may be taken from the digestive tract in the ionized state, a view diametrically opposed to the conception of Bunge.

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[1] Häusermann, E.: Die Assimilation des Eisens, *Ztschr. f. physiol. chem.*, 1897, Vol. XXIII., 555.

F. Müller[3] studied the influence of inorganic salts of iron added to an iron-poor diet upon animals that had been made anemic and noted in the iron-treated animals, a more rapid erythrogenesis. Tartakowsky[4] obtained similar results.

From the work of Abderhalden, Müller and Tartakowsky, it is probable that iron in the inorganic form or as an albuminate of iron, may be absorbed and utilized for hemoglobin formation but that it is in this form no more effective and probably less effective than is the iron which is a natural constituent of such foods as lima beans, peas, spinach, red meats, yolk of egg, etc.

At the time when doubts had arisen as to the body's ability to utilize inorganic iron for constructive purposes, the hypothesis was advanced that inorganic iron might stimulate the blood forming organs or increase their capacity for utilizing the organic iron of the food. This view was early championed by von Noorden to explain the action of inorganic iron in chlorosis. If inorganic iron possesses such properties, its addition to a diet already containing an abundance of food-iron should increase the rate of red blood cell production. In 1900, A. Hoffmann[5] studied the bone marrow and blood of normal and anemic rabbits fed on diets rich in iron, to some of which inorganic iron salts were added, and observed in those rabbits receiving the extra iron a slightly higher hemoglobin and erythrocyte count and a more rapid erythrogenesis in the bone marrow. The differences reported, however, were very slight and have been considered of less significance than he originally attributed to them. Abderhalden in his earlier studies claimed a more striking effect from iron salts when added to a diet containing much organic iron than when added to an iron-poor diet. Both of these studies therefore favored von Noorden's hypothesis. Later, however, Tartakowsky failed to confirm Abderhalden's finding in this respect and in 1911, Zahn[6] found in seventeen experiments that, except in one young animal, the addition of either iron salts or albuminates of iron to a diet already containing abundant organic iron was without any stimulating effect upon erythrogenesis. The experimental results upon this point are therefore conflicting. A true stimulation of the blood-forming organs by inorganic iron salts may possibly be the correct interpretation of certain experimental results upon young animals but in many other instances the demonstration of such an action has been impossible.

Regarding the action of iron in chlorosis, recent observations of Morawitz[7] are of interest. He has reported a series of twenty-eight cases which resemble chlorosis in that they were for the most part young girls who had recently come from the country to the city and entered domestic service and who had developed lassitude, headache, black spots before the eyes, amenorrhea, a craving for sour food, in some instances a tendency to syncope, in all functional cardiac murmurs and in many, venous hums and yet in none was the hemoglobin below eighty per cent. (Sahli) and in eight it was above ninety per cent. In spite of this high hemoglobin, of twenty of these girls that had been adequately treated with iron, eighteen showed marked and rapid disappearance of symptoms. Handmann[8] also reported forty-four similar cases suggesting chlorosis, but with normal or almost normal hemoglobin, in all of which iron had a marked therapeutic effect. Morawitz, in view of his observations, is inclined to consider chlorosis not primarily an anemia but a disease in which low hemoglobin is merely one of the frequently observed symptoms and to believe that iron acts in chlorosis not primarily on the hemoglobin forming organs, but upon some other focus of disturbance in the economy, leading only secondarily to increase in the hemoglobin, had this been low. He sees therefore in the therapeutic effect of iron in chlorosis no evidence of a specific stimulating action of iron upon the blood-forming organs.

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[2] Abderhalden, E.: Die Beziehung des Eisens zur Blutbildung, *Ztschr. f. Biol.*, 1900, xxi., 483; Abderhalden, E., and Hanslian, R.: Ueber das Verhalten des im Fleisch enthaltenen Eisens und Calcium bei der Verdauung, *Ztsch. f. physiol. chem.*, 1912, lxxx., 121.

[3] Müller, F.: Beiträge zur Frage nach der Wirkung des Eisens bei experimentell erzeugter Anämie, *Virch. Archiv.*, 1901, clxiv., 436.

[4] Tartakowsky, S.: Ueber die Resorbtion und Assimilation des Eisens, *Archiv. f. d. gesamt. Physiol.*, 1904, ci., 423.

[5] Hoffmann, A.: Die Rolle des Eisens bei der Blutbildung, *Virch Archiv.*, 1900, clx., 235.

[6] Zahn, A.: Experimentelle Untersuchungen über Eisenwirkungen, *Deut. Archiv. f. klin. Med.*, 1911, civ., 245.

[7] Morawitz, P.: Untersuchungen über Chlorose, *München med. Woch.*, 1910, lvii., 1425.

Whether the spleen plays any essential part in the iron metabolism, is a question raised by the work of Asher[9] and his coworkers, Grossenbacher and Zimmerman, in 1909, when they published two studies of the iron metabolism in puppies with and without splenectomy and concluded that there was a markedly increased iron elimination after splenectomy persisting up to at least ten months. They based upon these conclusions their view that the spleen is an important organ in the intermediary iron metabolism, enabling the body to conserve and reutilize its iron.

During the past year, Dr. Pearce and I[10] have studied the iron metabolism of eight dogs before splenectomy and from four days up to twenty months after splenectomy. We found an increase of the iron elimination in three out of five animals during the first two weeks after splenectomy but this increase did not occur in the two other animals. Probably this occasional increased iron output immediately after splenectomy has some relation to the anemia that usually develops during this same period and that varies in degree in different animals. We could find no evidence at all of increased iron output at one, nine and twenty months after splenectomy. The discrepancy between our results and Asher's may possibly be explained by the extremely short periods employed by Asher, by his failure to mark the stools at the ends of the periods and by the fact that he considered the iron output of his animals without taking into account their weight. Had he reckoned their iron output per kilo of body weight, no significant increase in the iron elimination ten months after splenectomy would have been found in his experiments and his conclusions must have agreed with ours.

We conclude therefore from our own studies and from the literature bearing on the matter that there is no good evidence to support the view that the spleen exercises any fundamental or important influence on the iron metabolism of the body.

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[8] Handmann, E.: Schilddrüsenveränderungen und Hämoglobingehalt des Blutes bei Chlorose. *Münch. med. Woch.*, 1911, LVIII., 1175.

[9] Asher, L., and Grossenbacher, H.: Untersuchungen über die Funktion der Milz. *Biochem. Ztschr.*, 1909, XVII., 78; and Asher, L., and Zimmermann, R.: Fortgesetzte Beiträge zur Funktion der Milz als Organ des Eisenstoffwechsels. *ibid.* p. 297.

[10] Austin, J. H., and Pearce, R. M.: The Influence of the Spleen on Iron Metabolism, *Journal Experimental Medicine*, 1914, XX., 122.

CORRECTION OF ABNORMAL BLOOD PRESSURE.

BY A. B. HIRSH, M.D.,
Philadelphia.

(Read in the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Patients with anomalous symptoms, among these being altered blood pressure, at times tell us of having tried many practitioners, general and specialist, besides so-called newer cults, all with indifferent results. Drugs, diet, massage, exercises, hydrotherapy and change of scene and altitude were thus included.

Unlike some indifferent previous attendant who hides his failure by dismissing the case as neurotic, neurasthenic or hysterical, therefore unlikely of cure, another physician, viewing these terms as merely a cloak for an incomplete diagnosis, investigates further. Perhaps an infective focus may be found in the nose, ear, throat, chest or abdomen, as a primary cause of the whole trouble, and thoroughgoing efforts remove this disease site. Largely, though, because of long-continued infection from this source, it is found that the patient complains as before of his original symptoms until due attention is paid to blood pressure changes and this has finally been brought to a relative normal.

What calls for special attention is the real entity to the patient that each subjective symptom is found to be, by the alert doctor, when thus consulted. The latter will soon realize the true significance of hypotension or hypertension as the more important among other symptoms and, shunning drug treatment, resort to solely physical measures for relief.

The summaries of the histories of typical instances will make plain this relationship.

Case 1. Symptoms that dated back fully thirty years following repeated injuries had finally brought a physically perfect Civil War veteran to semi-invalidism. Protracted insomnia, irregular pains over the right side of the trunk, cold extremities, alternate chilling and flushing, hepatic and intestinal torpor and general malaise were symptoms that caused him physical and mental distress. Many were the doctors and kinds of treatment consistently followed but not until Dr. Bryan of Asbury Park, N. J., had found coëxistent hypertension (about 220 mm.) and had used d'Arsonvalization was the patient able permanently to leave his invalid roller chair. (Professor d'Arsonval of Paris, in 1893 demonstrated the beneficial results of passing through the body an alternating current of about one half ampere, in volume, and 10,000 volts, in pressure, at a frequency of from one to two million oscillations per second.) On the patient's coming to Philadelphia in December, this method was continued by myself and gradual lowering of pressure caused final disappearance of the subjective symptoms. The sphygmomanometer now records a systolic pressure of 135 mm. He volunteers the belief that he feels like a new man and his cheerful countenance and energetic physical movements would seem to confirm this gratifying improvement.

Case 2. Frequent daily onsets of vertigo, occipital headaches, a tendency to fall sideways and a blood pressure of 240 mm., in a matron of sixty-three years, with chronic parenchymatous nephritis, were the symptoms for which her physician, Dr. Nathan Thorne, of Moorestown, N. J., had referred her for physical measures. Ten years' resort to drug remedies by other practitioners had finally proved without avail. Meniére's disease could readily be excluded. Autocondensation within several weeks had brought down and held the systolic pressure to 160 mm., the limit of safety in this form of kidney involvement. She has since felt herself subjectively a well woman, active in social and other duties.

Case 3. A merchant of forty-three years had noticed persistent vertigo but slighted it until an insurance company refused to increase his life policies because of excessive blood pressure. His physician, in referring him for treatment, told me that this equaled 180 mm., a figure that was soon lowered to 130 mm. by the high frequency, high voltage current passed through the body, and with corresponding improvement of symptoms. Treatment was discontinued before any impression could be made on the incipient vascular sclerosis undoubtedly present.

Case 4. Marked mental depression, occasional dyspnea, infrequent vertigo with syncope, and a blood pressure of 190 mm., in an otherwise healthy widow of sixty-one years, were symptoms for which she was referred by Dr. A. H. Davis of Germantown, Philadelphia. The usual remedies, consistently given, had failed to change these symptoms or the enteric torpor that followed her giving up the activities of housekeeping about one year previously. Five weeks of autocondensation, along with application to the upper abdomen of the static wave current, induced a complete change. (The later modality, a continuous pulsating current of about one quarter milliampere and 10,000 volts' pressure, contracts and relaxes the tissues and thus, in this case, powerfully stimulated the functions of the abdominal organs.) Her blood pressure had fallen to 120 mm., thus relatively normal, the mental and gastrointestinal symptoms disappeared while cheerfulness had replaced her former gloomy outlook.

Case 5. Debility, a sense of general discomfort and a blood pressure of 185 mm. were the causes for which a foreign shipping merchant of forty-five years was referred for treatment. Due to "century" runs and like physical indiscretions during the bicycle craze of twenty-five years ago, there exists universal whipcord arterial hypertrophy, a heart hypertrophied nearly an inch beyond the midclavicular line and chronic interstitial nephritis. Two weeks' autocondensation, reducing his hypertension to 155 mm., induced disappearance of his distressing symptoms, but occasional repetition of such a course, is of course, required where such organic changes are present.

Case 6. An extreme case was that of the

seventy-two-year-old widow of a naval surgeon referred by Dr. William Martin of Atlantic City, N. J.: there existing severe full throbbing headache, coarse tremor, and other symptoms referable to various organs and lasting many years. Never before had I noted more typical ribbed pipestem radial arteries, so that the blood pressure of 210 mm. caused no surprise. Her case is quoted especially to state what may be ultimately expected through persisting with autocondensation, as fully six months had passed before marked improvement had been subjectively felt. When she left the city in June to summer at the seashore, the head attacks had greatly lessened in severity and number; the blood pressure had fallen to 150 mm., quite notable where vessels were thus sclerosed; application of the static wave current over the upper abdomen had improved digestion, assimilation and, in degree, defecation. Of equal interest, though, was the evident disappearance of some of the rigidity of the radials (and, presumably, judging by the symptoms, of the vascular system generally) in that the "ribbing" had almost gone. This is fully in accord with the recent conclusions of MacCadrick.[1]

Case 7. In a matron complaining of manifold functional nervous symptoms after a long menopause, I could find no evidence of local infection or of cardiorenal disease. Unless due to derangement of some interior secretion, the origin was purely neurotic; the blood pressure, however, ranged from 180 mm. to 190 mm. All efforts (diet, drug remedies, bowel regulation, etc.) of her attendant, Dr. John B. Carrell of Hatboro, Pa., failed to lower the tension below the former figure. Resort to autocondensation with the static wave current applied to the upper abdomen induced a state of well being, hypertension falling to and holding at about 135 mm., so that she could take up social and household duties as formerly.

Case 8. A like instance of physical and mental depression occurred in a confrere, doing an extensive practice in a Philadelphia suburb, where hypertension ranged about 185 mm. Here the habit of worriment over seriously ill patients was the sole factor found to explain his symptoms, and lowering of the tension to 160 mm. had brought about a great improvement so that the activities of practice are no longer found burdensome.

The question is at times asked as to what may be expected from some physical measures for the after-care of patients convalescent from cerebral hemorrhage due to vascular sclerosis where paralysis is short of total. And here the outlook, having in mind their former poor prospect, has certainly greatly improved, because the important symptom to consider, high tension in weakened arteries, obtains certain relief. Several cases may be quoted.

Case 9. A seventy-two-year-old resident of Moorestown, N. J., was referred by her physician, where faithfully carried out resort to autocondensation for control of vascular tension, static wave current for neuralgic pains along the course of the brachial and sacral plexuses, sinusoidal currents for nutrition of muscles and nerves in the paralyzed areas, and occasional vibrissage for localized aches gave the patient more than two years of relative comfort so that she was even able to take up many of her former social activities.

Case 10. Again, a leading financier of the city was brought by his Germantown physician for a mild hemiplegia when several weeks convalescent from cerebral vascular rupture and for reduction of a dangerously high blood pressure with concomitant symptoms. Here it was necessary to resort only to autocondensation and the static wave current over the upper abdomen. The pressure came down from 190 mm. to 150 mm., the paralysis is barely noticeable, his spirits are much brightened while he makes daily trips to his office in the business district. As compared with the old time "do nothing" or drug-absorptive plan of treatment, certainly the outcome here has been most gratifying.

Among patients referred for a variety of symptoms that included *hypotension* were those with symptoms of debility following operation for incomplete abortion, of irregular types of primary anemia, of exhaustion from prolonged overwork, of exhaustion following long-continued irregularly treated enterocolitis, etc. These patients received the stimulating effects of the static wave and induced currents, of radiant light and heat, of vibration of the body reflexes and of thermopenetration from the coil transformer. The results were uniformly successful.

From the record of these patients it is rational to conclude that:—

1. When other procedures fail to remove anomalous symptoms that include vascular hypertension, autocondensation by the d'Arsonval method should be considered.

2. When, however, these resistant symptoms are associated with hypotension, then the wave current from the static apparatus is especially indicated.

3. In either case collateral indications are to be reached by other physical modalities, as already described in the text. In addition, atonic or spasmodic coprostasis, not due to in-

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[1] "High Frequency in Vascular Sclerosis," describing "Rigidity of Calcified Arteries," *British Medical Journal*, Oct. 18, 1913.

flammatory obstructive bands and that does not respond to drug or other physical remedies, calls for sinusoidal or the static induced or wave currents, or for abdominal and spinal vibrissage, concussion or sinusoidalization.

4. Each locality should have at least one practitioner, well grounded in the physics of electricity and in the technic and therapy of modern medical electric currents, to whom professional brethren might look for aid in treating these seemingly incurable cases.

DISCUSSION.

Dr. Omar T. Cruikshank, Pittsburgh: Dr. Hirsh has given us a very valuable paper on the electrical control of blood pressure. He has very ably described several valuable methods for either raising or lowering the blood pressure, all of which I can highly recommend after ten years of active electrotherapeutic practice. Another method which Dr. Hirsh did not mention is that first described by Professor Bergonie of Paris, in 1909, in a paper read before the Academy of Sciences, upon the employment of electricity, in order to provoke a general exercise or stimulation for the muscles of the body toward a general therapeutic end, "as the proper use of any organ increases the vitality peculiar to such organ, and also influences the vitality of the entire organization."

Dr. Hampson described the specific effect of this treatment on the circulation in a paper before the Royal Society of Medicine in 1912, as follows: In suitable cases of weak, irritable, and incompetent hearts the control and improvement of the circulation can be made its primary function. The contraction of a muscle squeezes blood out of the veins in that muscle. The veins are provided with valves which prevent the blood from flowing in one direction, and allow it to flow in the other. Thus every contraction of the muscles drives blood out of it, always in the same direction, that is, towards the heart. Under the stimulation of the Bergonie apparatus, a number of the large muscles contract all at the same time, and so they all at the same time send a wave of blood towards the heart. This is repeated at every beat of the metronome.

This one result of the Bergonie treatment, which accounts for some of its good effects, already described, is the powerful assistance it gives to the circulation by reducing in the veins the pressure against which the capillaries have to deliver their contents, and so indirectly reducing the pressure against which the heart has to pump.

"A further and very remarkable effect is produced by timing the contractions in a special manner, if they are arranged at almost exactly the same speed as that which the patient's heart beats, the heart's action will presently be found to have timed itself so as to be synchronizing exactly with the rhythmical contractions. If these contractions be arranged at somewhat slower speed than the heart beats the latter is soon reduced to the same slower speed. Thus it is possible to control and regulate the speed of an excessively rapid beat.

"The influence of this treatment upon the patient is in all other respects nothing but beneficial.

"The reinforcement of the circulation increases the activity of all the functions which depend upon a good circulation. In particular, breathing distress is markedly relieved, and the patient feels a sense of well-being and comfort which lasts for several hours, and becomes increasingly distinct and lasting by repetition. At the same time that more circulation work is being done, the heart is exerting itself less over doing it. Owing to the assistance it receives from the contractions of the body muscles, which being stimulated rhythmically, and in synchronism with the heart itself, may be described as so many subsidiary hearts. The heart is therefore in a resting condition, and much more favorably placed for the recovery of tone and strength. Patients with dilated, rapid, and irritable heart, who had previously gone for treatment to Nauheim, and derived much benefit from it, find this application of the Bergonie method of stimulation acts more promptly in controlling the heart, and have preferred to remain under its influence at home, where the dilated heart has undergone a notable reduction in size. It is almost needless to say that the treatment must be given with the greatest caution and in constant relation to the patient's condition which has to be most carefully observed."

Dr. A. J. Hopkins, Pittsburgh After listening to the very interesting paper of Dr. Riesman on high blood pressure, and the tendency therein to minimize its dangers, and forcibly to emphasize the inefficiency of the ordinary medical means to bring about its reduction, even the dangers of so attempting it, one hears with considerable satisfaction the paper of Dr. Hirsh, in which he tells of a method of reducing blood pressure by means considered perfectly safe, and coincidentally productive of a general constitutional betterment. This measure is not to be used in compensatory hypertension, as in chronic parenchymatous nephritis and cirrhosis of the liver, as in these cases the necessity of increased pressure more than compensates for the other dangers of its presence. The explanation of the beneficial action of autocondensation might be said to be molecular massage, mechanically, by the force of the high frequency electric current.

I can corroborate by personal experience the good results attainable by the d'Arsonval autocondensation treatment, and the static wave current used by Dr. Hirsh in the treatment of his cases. I was interested in his noting the seeming reduction of the rigidity of the radials in one of his cases, as it brings to my mind an occurrence in one of my own cases that I was loath to credit to the treatment but I could account for it in no other way. About two years ago, man, aged seventy, blood pressure 200+, weight 220, hearty eater, especially of meats. This man had daytime sleepiness and heaviness, micturition two and three times at night, and frequent in daytime, albumin and pus in urine ascribed to cystitis rather than nephritis, enlarged prostate, and many fibrolipoma or fatty tumors of many years' duration, varying in size from beans to small eggs, over the surface of the body. Under autocondensation for several months at gradually increasing intervals, his blood pressure came down to 155 mm., his bladder symptoms passed away, his urine cleared up, and more recently, what I could not account for, a considerable reduction in the size of his fatty tumors. This man had no treatment other than autocondensation, a slight reduction in diet, and electric light baths occasionally.

DR. DONALD MCCASKEY, Witmer: In this new chapter of the study of blood pressure which recent developments have opened up, there is an acute condition which develops in the everyday experience of the average country physician.

Suppose we are called to a case of stroke and find, upon arrival at the bedside, a typical hemiplegia. How do we know what will be the normal blood pressure of this patient in our treatment of his acute condition. I recall a patient stricken down with an acute hemiplegia; upon arrival at the bedside I took his blood pressure. It registered 210 millimeters of mercury. I straightway bled this patient of about one pint of blood and found that the blood pressure reading continued to remain at the 210 figure. The apparatus was investigated but was all right. The air was released and when the zero register was obtained the pressure pump was again applied. The blood pressure again ran to 210. I made a third trial with the same result. Here was a typical emergency case, common in the experience of every family doctor. Is it not reasonable to suppose that my blood-letting procedure was wrong and that where an acute hemiplegia develops we should not attempt to treat the patient by an effort to reduce the blood pressure? Is it not reasonable to suppose further that this persistent attitude of blood pressure was Nature's effort to prevent any unnecessary blood from being forced out in the cerebral substance and thus destroying the continuity of the blood clot already present? I submit this phase of this study of the treatment of blood pressure for our further detailed study.

DR. HIRSH, closing: Emphasizing the point raised by Dr. Hopkins as to the mechanics of autocondensation in treatment, it is important to realize that d'Arsonval insisted on this fact. The undirectional current of an enormous rate of oscillation and moderate voltage, in passing through the body, acts by relaxing the capillaries and so removing much of the burden of the overloaded heart. Thus invariable action should be clearly grasped, as this is a power not possessed by any drug or other remedy at our command. When modern medical electricity is thoroughly taught in our schools, undergraduate and graduate, as it should be, at least one practitioner in each center will be warmly welcomed by professional brethren to assist in relieving the urgent symptoms of patients such as have just been described.

ARE WE EXAGGERATING THE DANGERS OF HIGH ARTERIAL PRESSURE?

BY DAVID RIESMAN, M.D.,
Philadelphia.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

When I began to practice medicine I looked upon a trace of albumin in the urine as a sign of Bright's disease and as just ground for a grave prognosis? This attitude was also that of my contemporaries who had been taught at the same fountain of knowledge. We have grown considerably wiser since then and know that, granted certain conditions, albuminuria is compatible with many years of life and comfort and that a gloomy prediction is often not only a scientific error but a cruel injustice to the patient. Shall we pass through the same mental process with regard to high blood pressure? This much is certain, when medical men first began to take blood pressures systematically a pressure of 160 or over was looked upon with alarm; but experience has taught us that under certain conditions a pressure of 160 or over is by no means an omen of early dissolution. It would be bold and irrational to base such an important prognosis as that of the duration of a man's life on a single fact or symptom like the pressure reading. We must know much more about a patient than his pressure in order to do justice to his case.

A great deal is written on the subject of high arterial pressure but little is actually known. It certainly is not easy to get a clear idea from the textbooks. I have consulted a number of them recently and have found a monotonous similarity and obscurity in all. I shall abstain as far as possible from theoretical considerations and shall confine myself to hypertension in its clinical aspects. From a study of these aspects it is possible to derive a useful classification. This is as follows:—

1. Hypertension in association with demonstrable nephritis.
2. Hypertension in association with demonstrable arteriosclerosis.
3. A combination of one and two, that is hypertension with evident arteriosclerosis and renal disease.
4. Hypertension without either manifest disease of the arteries or obvious nephritis.

These four classes are not sharply divided but in the main constitute recognizable clinical types.

1. Nephritis is the best known and most frequent cause of persistent high blood pressure. The diagnosis of this form is easily made—polyuria, low specific gravity, hyaline casts, eye changes, hypertrophy of the heart, and a ringing second aortic sound.

2. Arteriosclerotic hypertension without a coexisting renal factor is not common. Disease of the arteries may be extensive to the point of calcification without material increase of the pressure. On the other hand, as many autopsies have shown, there may be extensive internal sclerosis, in the brain or in the splanchnic area, with soft peripheral vessels. It is the leathery or "rubberoid" arteries that are especially associated with high tension. The diagnosis of this form of hypertension is simple enough in the established case, but the early stages, when the process is in the making, often escape us. The thick, rigid arteries, the cardiac enlargement, the metallic second aortic sound, the tortuous temporals, and the ophthalmoscopic findings make up the diagnostic picture.

Syphilis is probably the commonest cause of arteriosclerotic hypertension unassociated with renal disease. Renal changes eventually develop and when once present it may be difficult to say which was the primary condition.

3. The combined form of hypertension in which renal and arterial disease coëxist is the most serious and the one giving the highest pressure readings. It is often difficult to say which was primary. In those under forty it is a safe assumption that the kidney disease is the underlying condition. This may also be the case when the disease manifests itself in later life, but not with the same frequency. The cardiovasculorenal cases are usually not over-fat, often they are spare individuals with sallow complexions, and if of the male sex have prominent and extremely tortuous temporal arteries. In women these arteries rarely show well. The diagnosis is made by the physical signs—cardiac hypertrophy, stiff rigid arteries, extreme hypertension, and the urinary findings—albumin, casts and the signs of functional renal inadequacy. Many patients of this group perish of an intercurrent disease, pneumonia being practically always fatal in them. Those that do not succumb in this way usually die of uremia. All of them suffer much from their disease, either with respiratory distress or with one or more of the many symptoms of renal autointoxication—thirst, itching, headache, polyuria, convulsions, hemiplegia, delirium, or coma.

4. The last variety of hypertension is one that has interested me very much. It is usually an accidental finding as neither the arteries nor the urine gives any clue. The only features that lead one to suspect or even to look for hypertension are the loud, ringing, second aortic sound and the displacement of the apex beat to the left, indicating cardiac hypertrophy. The peripheral arteries are soft and almost impalpable. Many of my patients of this group are women past middle life. Whether it be a coincidence or a characteristic of the condition, these women have a certain physiognomy in common: They are obese and usually, not always, undersized; they have large busts, ruddy complexions, and possess a good deal of physical and mental energy. The men of this group have deep solid chests, are above normal weight, and are likewise energetic.

I have no time to go into the details concerning the causes of this form of hypertension. It has formed the subject of much speculation. Janeway, Fischer, and others contend that the cause is a latent nephritis. I will admit that nephritis is a common lesion found at death but to my mind the condition is not explicable on a purely renal basis. The patients rarely die of their kidneys but die a cardiac death. It is quite possible that the moderate changes found in the kidneys at autopsy are due to a renal ischemia, in itself the result of a spastic contraction of the cortical renal vessels, and are therefore secondary and not primary. It appears to me that we are dealing with a tonic contraction of the arterioles caused by some toxic substance circulating in the blood. This toxic agent probably has a complicated origin, in which several of the endocrine glands are concerned.

Under this same head we may place the hypertension of Graves' disease, while that of the obese middle-aged diabetic belongs either to the same category or to the second, that of arteriosclerotic hypertension.

We come now to the application of all this to prognosis as an answer to the question forming the title of this paper. What is the significance of high pressure in the various groups I have described?

With regard to nephritic hypertension and the combined nephritic and cardiovascular hypertension, the prognosis is gloomy. The degree of hypertension as I have indicated, is not a reliable guide for predicting the duration of life. In both types the high pressure is in large part compensatory, for without it the blood could not be properly driven through the diseased kidneys. Patients belonging to this group bear acute infectious diseases badly. Their own malady is progressive. The treatment, to be of any avail, must be begun as soon as an important symptom like hypertension is discovered. In other words, in these cases the dangers of high arterial pressure are not often exaggerated since the condition upon which the high pressure depends is one of great gravity. Nevertheless, it is not wise to alarm patients too much, but someone of the family must be told that the duration of life is limited.

The purely arteriosclerotic cases have as a rule a syphilitic origin. In a few lead, diabetes, and other toxic factors are responsible. In specific cases, if treatment is instituted early, the prognosis as to longevity is good, but apoplexy, aneurysm, angina pectoris, and cardiac failure, hang over the patients. Mental strain, worry especially, affects them badly.

The fourth group is a large one, and its members come under observation with pressure readings of from 180 to 270. A urine normal in quantity and quality and the total absence of nephritic eye-changes show that if the kidneys are affected they are not seriously diseased. The radials are soft, but the heart is enlarged though fully competent. An arcus senilis is commonly found. This is the class of patients in whom the significance of high pressure is likely to be exaggerated. I have been astonished to find in my practice how many women are subject to this condition. In addition to the diastolic pressure, I have taken height and weight and have found that the majority of the patients are far too heavy for their stature. The systolic pressure in these individuals is no guide whatever to prognosis, nor can it be said that the diastolic pressure, the pulse pressure, the heart load, or any other numeric factor tells us how long a patient is going to live or how much work he is capable of doing. There are too many parts to the human machine for its strength and endurance to be expressed by a number. It is therefore injudicious to get excited over a single symptom like a high pressure reading. As long as the heart sounds are good and the kidneys efficient, the patient is not only fairly comfortable, but is able to do a great deal of physical and mental work. I have in mind a woman past fifty, whose pressure ranges from 220 to 270, who can play golf with ease and enjoyment. Furthermore, when we once realize that high pressure of itself is not of serious significance unless accompanied by conditions of cardiorenal failure, then we shall not attempt to lower it or "knock it down," as some express it, to a supposedly normal level. In such patients *the normal level is a high level.*

That the pressure in this group of cases is not due to a permanent narrowing of the arterial lumen, but to vasomotor hypertonicity together with increased cardiac power, is proved by the influence of treatment, either by vasodilators or by physical measures such as various forms of electricity. The hypertonicity of the vasomotor mechanism can be due only to chemical stimulation. Whether this takes hold centrally or peripherally and what the chemical substance is we do not know.

It may be something primarily useful and perhaps normally present which in these cases, in response to a demand, in keeping with the law of Weigert, is elaborated in excess.

In many cases of hypertension, especially in the last group, that in which the kidneys and peripheral vessels are apparently sound, the patient can live a good while provided he cuts down his food intake, lessens his activities in some degree, and takes frequent short vacations. A short vacation is better than a long one which is usually followed by work at double quick. I am opposed to the use of tobacco in any considerable quantity much more than I am to the use of alcohol.

I hope I have not given the impression that I undervalue blood pressure studies. On the contrary, they should be made in every case frequently and carefully, but it is a question in my mind whether when we tell some of our patients, especially those of the fourth group in my classification, what their pressure is, we do not create a hypochondriacal state of mind that is more harmful than the pressure itself. And with regard to cases of nephritis and advanced arterial sclerosis, it is not the pressure that gives us concern, but rather the underlying disease, for by that the patient stands or falls.

DISCUSSION.

Dr. M. Howard Fussell, Philadelphia: Dr. Riesman's paper is characteristic of the man, clear, succinct and to the point. We do exaggerate the danger of high blood pressure and we are constantly using meddlesome therapeutics on account of this exaggeration. His last paragraph is correct, "On all cases of hypertension especially in the last group, the patient can live a good while and continue work provided he cuts down the food intake, lessens his work somewhat, and takes frequent short vacations." Indeed, I may paraphrase all Dr. Riesman has said by beginning with the statement that blood pressure whether high or low, is but a symptom, and withal a symptom which may occur from many causes, the real reason for which we know little. As a symptom it may need treatment, but this is comparatively rarely the fact. Just as cough and pain as symptoms may themselves need treatment, so may high or low blood pressure.

We have learned from many observations that 150 mm. as a systolic, and 75 or 80 mm. diastolic is a fair average for an individual of middle life. We also know that points both above and below this average are perfectly in keeping with perfect health. We also know, however, that a persistent high pressure means some disturbance in the kidneys or the vessels, the heart, in metabolism, in the vasomotor system, etc. Therein lies the value of sphygmomanometer, and gives the reason for the routine use of blood pressure instruments. They give the means for observing a symptom which is of value, because it attracts our attention to the patient's condition. We must learn to treat his condition and not his blood pressure.

Take a case of pregnancy with high blood pressure. This symptom is one of the greatest value as indicating a toxemia, other things being equal, due to the pregnancy. We do not treat the pressure (therefore the folly of veratrum viride), we do endeavor to get rid of the toxemia. The blood pressure observation, not the lowering of the blood pressure, may save the patient's life.

Given a fat individual (particularly a woman, as Dr. Riesman says) who overeats, under-exercises, overstimulates, and perhaps overworks, he or she has a high blood pressure. In spite of all we can do, the blood pressure may remain high, but our attention has been called to the real condition surrounding the patient. His blood pressure is not treated. He is taught to live and work properly, and his life may be greatly lengthened.

Take a case with hypertrophied heart, low specific gravity urine, slight albumin, with granular casts, and polyuria. In 100 out of 100 cases these individuals will have a plus blood pressure. The blood pressure will remain high until the end of the chapter, and one of the surest signs of dissolution is a sudden drop in the pressure.

We do not fear or treat the pressure. We treat the condition of the patient and look upon the high pressure as merely a symptom.

In syphilis and other conditions, as Dr. Riesman says, high pressure may pressage apoplexy and other circulatory accidents but the pressure is only possibly treated by getting at and relieving the underlying disease.

Certain cases of cardiac decompensation have as one of their symptoms high pressure. To attempt to lower this pressure with drugs is a fairly sure means of injuring the patient. Rest may lower it, but the pressure descends because the cardiac condition is relieved.

In a nervous individual, neurasthenic, alarmed, introspective, high pressure may be purely vasomotor in origin. Relieve the patient's distress, and presto the pressure falls.

In a word, blood pressure readings should be routinely made and recorded; often a very high or a very low pressure will indicate some basic trouble, but we do not treat the pressure, we treat the condition. It is the condition which disturbs, not its single symptom, high pressure.

Dr. Philip Marvel, Atlantic City: Dr. Fussell has struck the key-note of the subject when he speaks of blood pressure being an associated symptom of certain conditions as well as certain diseases and not an entity in itself. The pressure, therefore, must be considered from the standpoint of whether it is a representation of a compensated or a decompensated circulation. The formula used first by Dr. Stone of Toledo in 1913, to be found in the October number of the *Journal of the A. M. A.* of that year, while open to objection in the main is helpful in determining the relation of the cardiovascular demands to the work to be done. The formula, given by Dr. Stone, attempted to estimate the work to be done, and further studies, in clinical cases, have shown us that if the practice of working out our cases by this method is carefully followed a more intelligent and accurate knowledge of them will be obtained. (Reference by figures showing actual blood pressure readings also showed the relation of the cardiovascular forces in maintaining compensating balance of the forces employed.) I regret the time will not permit of further dilation upon these formula relations as I believe I could make the subject better understood.

Dr. Robert N. Willson, Philadelphia: It is exceedingly important in a discussion such as this to emphasize the difference between the high systolic and high diastolic pressures, both with reference to the clinical significance of each and the treatment. Systolic hypertension signifies almost altogether a loss of cardiomuscular tone. Diastolic hypertension indicates vosomotor hypertone. Treatment of the one condition does not constitute proper handling of the other, nor does the lowering of the one always or even usually accomplish lowering of the other. Oftentimes, perhaps usually, to lower the systolic pressure by medicaments is detrimental to the patient, because it also means lowering of the ability of the heart muscle to perform its function of driving the blood through the arterial system. When the cause of the systolic tension can be determined, and if it be abnormal, its removal will be beneficial and nature will herself lower the pressure to the patient's then normal.

Diastolic hypertension requires vasodilation as its proper remedy, though by no means always should it be applied through drugs.

Many of the members will recall the reference made at Atlantic City, in that wonderfully interesting symposium on food products and metabolism, the reference to the pressure, at times, of certain amino-acids in the intestine that tend to vasomotor constriction and the need of their control by dietetic supervision. There is no question but that a wide field of study and treatment lies open in this direction in the way of vasomotor control.

One should remember that in many conditions, notably the acute infections, the systolic pressure is usually low and the diastolic normal or thereabouts. If systolic high tension be present in these infectious cases it is nature's own provision and the patient is likely to do well as long as the systolic pressure remains elevated. When it falls, *i. e.*, when heart muscle weakens, the patient has entered upon a danger period. In uremia the high systolic pressure cases with elevated temperature have a better prospect of recovery than the low systolic pressure cases. If we try to lower the pressure we may kill the patient. In the pneumonias there are often similar conditions present, and the same rules hold.

Another danger of overemphasizing high systolic pressures consists in the fact that in doing so we tend to meddle with one of nature's own safety-devices; and also in the fact that we tend to lose sight of the significance of diastolic pressure.

It is sometimes permissible to experiment judiciously with systolic pressures that are extravagantly high, provided we cease meddling the moment we see signs of cardiac instability. It is also a safe procedure to lower a systolic hypertension when we know it is above the given patient's normal. Unless however, we have ample facilities for intelligent watching of both the cardiomuscular stability and reserve force as well as the variation of the intravascular tension, we should keep hands off as far as medicaments are concerned, and assist nature only by measures aimed at the removal of the toxemia ever present in such cases.

Dr. H. A. Hare, Philadelphia: As Dr. Riesman has well said, the time has come when we should be able to arrive at fairly definite conclusions as to the exact significance and diagnostic value of high arterial pressure. As I have repeatedly pointed out, a pressure which is above the theoretical normal is in many cases not to be regarded as an evil, but is of the greatest possible benefit to the patient, since by this increased pressure an adequate circulation is maintained through blood paths which have become so unyielding or tortuous that a free flow of blood would be impossible if it were not that the pressure was raised. In other words, part of the thickening and overgrowth of the muscular coats of the blood vessels is beneficial. Hypertrophy is just as useful to this patient as is compensatory hypertrophy of the heart in a case of valvular disease. Furthermore most of these cases develop cardiac hypertrophy in order that the heart may aid the vessels in maintaining a high pressure. An abnormally high pressure, therefore, indicates that the patient is not normal, but it does not necessarily indicate that the patient should be subjected to treatment for its reduction. On the contrary any attempt to reduce compensatory high pressure often results in making a patient, who is feeling very well, quite miserable and inefficient. It is important too that the physician shall not reach the conclusion that a patient has a sufficiently high pressure to be beyond normal bounds by a single examination in his office. Every one of experience knows that a pressure taken shortly after entrance into the office is often ten or fifteen points higher than after the patient has become accustomed to his surroundings and to the novelty of the procedure, and in many instances a true picture of ordinary pressure in a given individual can be obtained only after the patient has been in bed for a number of hours. It would seem that there are some people who require a higher pressure to be efficient in their daily tasks than others, just as there are some engines that need a higher steam-pressure than others, and many of these people show a hypertension when active and a perfectly normal tension when really at rest. We are learning in regard to high arterial tension what we have learned heretofore in regard to other symptoms and physical signs, namely, that it is only a part of the arch upon which we rest our ultimate diagnosis, and furthermore it is not even the keystone of that arch, since the urinary, cardiac and the ocular signs are of much more diagnostic and prognostic value.

I am inclined to agree with Dr. Riesman in his views concerning alcohol. It has now been proved beyond all question that alcohol is not a stimulant in the old sense of the word. On the contrary it does good in many cases of disease by lending energy to the body and by dilating the peripheral blood paths so that the circulation is equalized, and a man who is exposed to cold, and who, therefore, has his peripheral circulation impeded, greatly relieves that circulation and cardiac embarrassment if, by the use of a moderate quantity of alcohol, he dilates his peripheral vessels. Of course, if he takes it in excess those alcoholic beverages which are prone to produce gouty conditions, or if he ingests more than he can utilize, he is being poisoned, not benefited. I am inclined to doubt whether tobacco can be as universally condemned because of its influence upon the circulation, as some persons have thought. It is rather a question of the kind of tobacco. Some of the very heavy imported cigars undoubtedly affect the circulation markedly, whereas the milder imported cigars and most of the domestic cigars have little influence. In some instances the smoking of a cigar after a midday meal, taken in the midst of an active life, causes the patient to rest and thereby aids his digestion and his circulation. Heavy smoking in the midst of intense activity may aid in raising pressure. Finally, in the brief time allotted to me for this discussion, I may once more emphasize that it is not the actual height of the pressure alone which concerns us, I have had many patients live for years with a systolic pressure between 200 and 250 in excellent health. Like many glycosurics they never know there is anything wrong until a life insurance examination reveals it. I would prefer that a patient have a pressure of 250 with a few hyaline casts and a trace of albumin than that he have a pressure of 160 with granular casts and retinal lesions.

Dr. H. B. Allyn, Philadelphia: I am in entire agreement with Dr. Riesman and Dr. Fussell apart from nephritic cases, and speaking generally the prognosis is good. I say this after watching a number of them for some years. Blood pressure is partly an individual matter. It is folly to suppose that a large muscular man, full of energy, should have the same blood pressure as a less vigorous man; with some persons efficiency is present only when the blood pressure is above 140, the limit at which insurance companies will accept a man for life insurance. As a matter of fact a person is a better risk often when the blood pressure is high than when it is low, for in the latter case there may be grave cardiac degeneration.

We should not alarm patients by talking of their blood pressure; that will do them more harm than the pressure itself. It is far better to remove their worries, to place them on a vegetable diet, and to send them out of doors to play golf.

Dr. J. F. Prendergast, Philadelphia: I have listened with the greatest interest to Dr. Riesman's paper. For the past two years I have devoted most of my time to teaching and demonstrating the value of the blood pressure readings from a clinical point of view. It is very unfortunate that so many physicians have failed to give the blood pressure its true clinical significance and value in making their diagnosis or in other words its relative value in the sum total of the clinical picture. If in interpreting the blood pressure findings we remember to give it the same relative value as we do a high temperature, we shall not go far wrong. My teaching has been if in your examination of a patient you find a high blood pressure, do not attack the pressure, simply because it is high; try and find the cause of the elevation of the pressure and treat that. Remember a high blood pressure is very often compensatory; it is an effort of the heart to overcome some defect in our cardiovascular renal system, and to knock it down with drugs will frequently upset compensation and do mischief. I have in my work run on to several cases very forcibly showing this point. I shall mention only two. While in New Orleans a physician came to me and related the following history: A relative of his had a systolic pressure of 220, becoming unnecessarily alarmed he attacked with great vigor the pressure giving sodium nitrate and nitroglycerin; unfortunately for his patient the drugs acted beautifully and he kept them up until he reduced the pressure to 160; edema of the legs and lungs set in, the kidneys refused to function and the patient promptly died, killed by overanxiety and meddlesome therapeutics. Dr. Bell, of Tulane University, mentioned a case to me where he found that every time he attempted to lower the blood pressure in a man past middle life (it was around 200), his patient could not attend to his usual duties; in fact, if he brought it down very much it put the patient "flat on his back."

At the meeting of the American Medical Association in Atlantic City in June, an elderly man, a physician aged eighty-one, from Montreal, Canada, came to me to have his blood pressure taken. I found it, systolic 275, diastolic 140, pulse pressure 135; he looked well, said he was feeling very comfortable and enjoying life for his age. My advice to him was to keep away from doctors who through overanxiety would attempt to lower his blood pressure as they would surely put him on his back by upsetting his circulation or compensation.

On the other hand we must not make too light of a high blood pressure. Cases of very high blood pressure need careful, judicious watching, as a persistent high pressure means that we have a cardiovascular renal condition to deal with or we have some toxemia behind the rise of pressure. In a high blood pressure I always advise the careful going over the kidneys, the blood vessels and the heart; if I find no lesion here then I look for intestinal toxemia or defective elimination. In my work I have found that a persistent high blood pressure of 180 and upward means very frequently a chronic interstitial nephritis. In my records every case of a persistent high pressure of 190 and upward is at the time a chronic interstitial nephritis or very quickly develops a kidney lesion. The few exceptions are in women past middle life during or after the menopause; in these cases the neurotic element enters and to my mind a cause of the high pressure is due to some changes in the secretions of the ductless glands at this period. In taking the blood pressure I always advise the auscultatory method; it is more accurate, we get the real diastolic pressure and by subtracting this from the systolic pressure we obtain our pulse pressure and we get an idea of what the heart is doing. I have for the past two years claimed that the systolic pressure was only one side of the picture or part of our equation. The pulse pressure under normal conditions varies from 25 to 45. My average in over 5000 observations is close to 38. My contention is that it is of great importance to know whether under certain conditions the pulse pressure is 20, 40, 60, 80, or even 100. With a pulse pressure of 20 we have a rather feeble drive to the heart with a poor systolic output, a weak myocardium, or even failing compensation; we look for this condition in tuberculosis, some stages of infectious diseases in shock, after profuse hemorrhages and in failing compensation. With a pulse pressure from 50 to 100 the heart is overcoming increased peripheral resistance with loss of elasticity in the blood vessel wall and is calling on its reserve capacity; as long as the heart compensates, our prognosis is good, but once our reserve capacity is overcome and decompensation sets in, look out for trouble. We have a wide pulse pressure in arteriosclerosis, interstitial nephritis and aortic regurgitation; when the pulse pressure begins to narrow in these conditions the prognosis is poor as it generally means a failing heart. The heart is working too hard, it is carrying an overload and wears itself out trying to drive the blood through rigid vessels, overcoming increased peripheral resistance and in trying to nourish the tissues through narrowed channels. Many of our clinicians deny the value of the diastolic pressure, for two years I have argued and taught to the contrary. (See article in *Chicago Medical Recorder* for March, 1913.)

One more suggestion. Do not hesitate to give digitalis in failing compensation, no matter how high the blood pressure. It will not elevate the pressure.

Dr. Joseph H. Barach, Pittsburgh: As Dr. Willson has just said, the pendulum swings ever to and fro. The pendulum which was swinging to, at which time we have overestimated the importance of hypertension, is now beginning to swing away from the seriousness of hypertension. Judging by the recent literature and by the paper of this afternoon, it seems that the reaction, with which a certain amount of heedlessness must come, will be resultant of as many unsatisfactory results as our first position in which we were overanxious about hypertension.

I believe we may safely say of the patient with an established hypertension, that that is the beginning of the end of that patient, and also that not one ever comes out of it alive. Of course not one of us ever come out alive under any circumstance, but what I infer is particularly true about cases of established hypertension. Let us recall that our accurate observations upon blood pressure cover, at most, a period of but ten years and that our prognosis should be curbed accordingly.

It is easy to be seen that we take readily to favorable prognoses, from what has been said by the men who have discussed the last paper, but let us not go away from here with the wrong impression. Remember please, that the best prognosis seemed to be warranted in only one of the four classes laid down by Dr. Riesman and of the pathology and pathologic physiology of that class nothing definite is known and we are in the realm of pure conjecture. Nor is that class a very large proportion of the total number of cases of hypertension.

Dr. Marvel in his discussion, referred to the work of Dr. Stone, in which it is stated that normally the pulse pressure equals fifty per cent. of the diastolic pressure and that all over fifty per cent. represents cardiac overload. When this was first proposed I was very much interested to know if it were actually so, realizing that such a method of estimation of the burden of the heart would be of great clinical value. To that end I correlated my findings in 742 normal males and I find that in the normal it may not be said that the pulse pressure equals fifty per cent. of the diastolic pressure, but that in seventy-five per cent. of those 742 cases the pulse pressure equaled anywhere from twenty to eighty per cent. of the diastolic pressure.

Many methods have been proposed for the estimation of the heart's work, but none of them can furnish us with absolute values. Personally I prefer my own method which is called the S. D. R. index. If in systole there is exerted a certain amount of pressure, say 120 mm. Hg., and in diastole there is exerted say 80 mm. Hg., then in both there will be exerted 200 mm. of Hg. Since per minute we have, let us say 72 pulse beats, which means 72 systoles and diastoles, then by multiplying 200 by 72 we get 14,400 mm. Hg. pressure per minute. I wish to state that the total does not give absolute results but that so far as I know, it gives a truer index of the cardiovascular expenditure of energy than any of the methods previously offered.

Dr. Tom A. Williams, Washington, D. C.: Of that type of high blood pressure which is not accompanied by sclerosis of the blood vessels or renal cirrhosis there are some features both diagnostic and therapeutic not generally grasped. Very often the first symptoms of patients with increased vascular tension are referred to the nervous system. Peripherally, the patient may complain of heavy or numb sensations. especially, in the feet or back; or there may be painful sensations like tingling, burning, itching, or ringing in the ears; specks before the eyes; or merely a general discomfort. Centrally, we may find dizziness, nausea, headache, or more often merely a dull thick feeling with inability to concentrate and torpor during the day. Another frequent symptom is preternatural wakefulness in the early morning, sometimes with irritability during the day. There may even be phobias or obsessions, especially of the pessimistic or melancholic type, referring to bodily or mental health. Loss of memory is not an infrequent symptom.

It is symptoms such as these which enable the neurologist, who is in the habit of analyzing minutely even the subjective symptoms of his patients to gain insight into their pathogenesis.

The clinical composites of which the above symptoms are among the commonest materials are sometimes unaccompanied by arterial hypertension, but their pathogenesis is essentially the same irrespective of this. Indeed the hypertension itself is merely a symptom of the common pathogen.

I append two cases which illustrate this point:

Case 1. Metabolic migraine resembling petit mal. A bacteriologist, aged 30, was referred in the spring of 1912 by Dr. Paul Johnston, because of attacks he calls "bilious," but not preceded or accompanied by constipation) which produce headache preceded by numbness and pricking in the fingers, followed by dizziness, mental confusion and foolish talk of paraphasic type, without loss of consciousness. These attacks have occurred every two or three months since the age of twenty-two; they are of very short duration. There were no scotomata, but they were formerly accompanied by vomiting. The headache is of the splitting kind, lasts all day, and is followed by dullness and slowness of thought the day following. The capacity to concentrate his thoughts is increasingly impaired even between the attacks. He is at times irritable. He has no bad habits; and apart from these attacks he is well and strong.

He received a blow on the left side of the head as a boy; and there is still a dent in the left parietal region, upon which side the headache more often occurs. He has a large appetite, which he says he controls; but he eats meat thrice a day, although he says sparingly. The blood pressure is not raised, the reflexes and sensibility are normal.

He was given the low protein "standard" diet. He wrote me the following winter, "Since I have reduced the amount of protein in my diet and increased the quantity of vegetables, I have had no recurrence of those spells. Dr. Johnston informs me that he remains well to date, two and a half years later.

Case 2. Metabolic psychasthenia. An engineer of thirty-eight, referred by Dr. Atkinson; powerful, energetic man, formerly accustomed to active work, had been for months unable to concentrate upon the office work to which he had confined himself for over three months. Previous to this he had been much less active, and latterly he had been very much worried by an official inquiry into a contract for which he had been mainly responsible. For no cause known to him, he felt a dread in the mornings, and an indecision in business matters is now realized to have been present several months. There was no syphilis, nor any other organic disease, he took no alcohol.

He had been improved by three weeks in the woods, during which he was very somnolent, but relapsed at once upon return, and could hardly stand his morning suffering. There was no insomnia.

The reflexes were rather active, but there was no other objective change in the lower neurones; there was no amnesia; the sexual hygiene was normal. He was much depressed, and longed to go away from it all for a year, which he could well afford to do.

He was sent for three weeks into the mountains. This time he fully recovered, on account of the light diet which he took. Breakfast and supper were fruit and milk, and his midday dinner was vegetables and six ounces of meat; after a few days, cereals were added morning and night.

Such cases and many others with hypertension lead me to assert that the common attribution of arterial hypertension to alcohol is a myth. Alcohol, on the contrary, not only lowers vascular tension and dilates the heart but interferes with the assimilation of the proteins upon which this disease depends.

Another commonly held notion which I believe to be erroneous is that as age advances, the blood pressure should do so also. This leads clinicians to look with no concern upon systolic blood pressures of 140, and even sometimes 160, in a person no longer young. This opinion is based upon the fallacious reasoning that what is common must be healthy irrespective of the environmental conditions. (It is no more reasonable than was the former acquiescence in the presence of animal parasites on the skin of everyone.) On the contrary, hypertension is always a sign of deterioration; and its causes should always be sought for and if possible, met. This can be done, unless organic changes have occurred to which hypertension is a permanently needed response. But even age is no indication that this is a fact; it is always necessary to test the patient's reaction to treatment; for this condition illustrates forcibly the old saw "medicatrix naturam morborum ostendunt."

The pathogen I believe to be improperly metabolized protein; and this opinion is supported by the remarkable success of a treatment which, while stimulating metabolism, at the same time reduces the load both of albuminoids and extractives. This I accomplish by imposing a diet based on the Chittenden standard of fifty grams protein a day, supplemented by abundant addition of the alkaline salts of the vegetable acids in the natural combinations occurring in fruits and vegetables. Metabolism is further aided by exercise appropriate to the age and cardiovascular condition, and by hydrotherapy and massage adapted to the individual constitution dealt with.

By these measures, the disease is attacked at its source, a much more rational procedure than neutralizing its effects by cardiovascular depressants such as nitrites, or than by dealing with symptoms as by narcotization even with bromids, or by the giving of strychnin, digitalis, caffein and so-called tonics in a vain endeavor to whip up jaded organs. Even forcible elimination by cathartics I believe to be a great mistake, as it disturbs the proper digestion upon which healthy metabolism depends. Constipation which is very common in these patients, I have never yet failed to remove without any stimulating cathartics whatever. The intestinal atonia with which the patients so often come may be removed within two weeks by abstention from purgatives. During this period it may be necessary to aid evacuation by massage or even by enemata; while the standard dietary affords enough cellulose and fiber to dilute the feces to a bulk sufficient to arouse peristalsis without at the same time straining the capacity of the digestive glands to deal with the large amount of fermentable food which would be otherwise required.

The following is the diet given: In the morning upon waking up, five to ten ounces of hot water containing ten to twenty grains of sodium bicarbonate or potassium citrate. Half an hour later, for breakfast, a large plate of fruit and milk or cream, followed by abundant cereal and milk with bread and butter. No meat, eggs or fish. Wait five hours. For dinner, not more than four ounces of meat or fish, which must be quite fresh; a very large plate of green vegetables; potatoes sparingly, and preferably nothing more than a taste of sweets. Five hours later supper may be a repetition of breakfast; but, for it, succulent vegetables may replace the fruit, and macaroni or a similar dish may be substituted for the cereal. Thirst and hunger between meals may be satisfied by water and fruit about one hour before a meal or during the night. Abstain from meat juices (gravy and soup), gelatine, coffee, tea, cocoa, salt and strong condiments, alcohol, pastry. All starches and meats well cooked; fresh vegetables not over-boiled.

An illustration of the need of more radical treatment in some cases is the case of a congressman, aged fifty-seven, referred by Dr. Hardin, March, 1912. His complaint was dizziness and trembling on walking. However, these symptoms had first occurred on his graduation, and again fifteen years before I saw him. On each occasion he recovered by means of physical labor on a farm. They have occurred from time to time since. Being advised that they might be due to an error of refraction, he saw Dr. Wilmer, who gave him prism exercises, without benefit. The vertigo so alarmed him that latterly he never went out unaccompanied.

Intercostal neuralgia had troubled him, especially when tired; and troublesome constipation caused him to take purgatives daily. The physician who sent him to me had recommended a course of baths; but these did not remove the symptoms, which, however, were always relieved by a hot bath and by whiskey. He was a very hearty eater and an excessive smoker.

Examination showed only some exaggeration of the deep reflexes, failure of the right plantar, abdominal and cremasteric cutaneous reflexes. The motility was normal, except for a slight lack of firmness in the gait. Sensibility was normal, and the pupils reacted and converged well. The heart sounds were clear, the second being somewhat accentuated. The systolic blood pressure, which a year before had been 190, had been reduced, under the care of the physician who referred him, to 160 when I examined him. He exuded an unpleasant odor of sour tobacco. Psychically he felt dull, as a rule, but worried much and felt very restless at times, especially after exertion.

The diagnosis was toxicotic hypertension. The prognosis was good. The treatment consisted of limitation of tobacco to three cigars a day, cure of the constipation by special diet, removal of the toxic condition by this special diet, aided by a course of baths to favor cutaneous action, and exercise in moderation to increase metabolism. As a result, by April 18 the systolic blood pressure was 130, and he was rarely dizzy. A favorable result, however, caused him to exceed dietetically once or twice, so by April 25 several dizzy attacks had occurred. The blood pressure, however, was only 124 the day I saw him. The instructions were emphasized, so that by June 2, with blood pressure 122, there had been no vertigo. On June 23, blood pressure was 124; constipation induced vertigo again, and it occurred once more on July 11 as a result of oversmoking. (Blood pressure was only 120 when I saw him.)

His complexion had improved, his eye become clearer, the accentuation of the second cardiac sound had disappeared, and he was able to perform his duties like a normal person. He remains well November 1, thanks to an intelligent and earnest wife, who sees to his diet. This patient remains well October, 1914.

I have said nothing of strain and anxiety as factors in the causation of this disease, for I believe their effects are purely secondary in that they interfere with the vegetative functions, which, of course, disorders the metabolism. Only, however, if there is a protein overload do we obtain the conditions required for the disease. Innumerable cases of chronic anxiety fail to develop hypertension or its antecedent, and the disease often occurs in persons of sanguine or placid disposition and contented life as in the case of the congressman. In the case of the engineer, not only did the causes for his anxiety remain, but he was cured without any psychotherapy, merely by dietetic measures.

THE HEART IN THE ACUTE INFECTIONS.

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More and more generally is the fact being realized that the heart suffers in greater or less degree in every acute systemic infection. We may safely go further and state that there probably occurs no instance of perfect cardiac recovery from an acute microörganismal invasion. This must not be taken to mean that there are no clinical recoveries from the cardiac complications of the acute infections. It does indicate, however, that a scar results from every attack upon the cardiac musculature and upon the endo- and pericardium, and that cardiac scars spell weakness, not strength.

Not infrequently, especially in the acute diphtheritic involvements, the pulse will become mean and thready, cyanosis is extreme, sweating profuse, nausea and vomiting appear, the blood pressure (systolic as well as diastolic) falls, and the patient may die with all the phenomena of shock. Such a patient dies primarily from structural damage to the cardiac mechanism, due to the toxin circulating in the blood. McCallum has shown[1] that there are other factors at work also, since the insufficient heart may be revived and resume its function for a time. But the microscope reveals lesions amply sufficient to account for every failure in the performance of duty.

It is well to remind ourselves that in certain instances of clinical recovery the heart not only fails to regain its full integrity, but dates its first clinical insufficiency from the acute systemic attack. The picture may be classified as the debility of convalescence, or as a postfebrile anemic state, or what not. The important point is that too seldom is the condition recognized as a real loss and lack of ability to maintain cardiac muscular tone.

Probably all of the acute infections are microörganismal, if not bacterial in origin. Even syphilis may now be classed within such a category. Rheumatism also seems ready to fall in line, perhaps as a genuine streptococcemia, possibly as a symptom-complex variably dependent upon now one, now another causal germ. The pneumonias acknowledge no one bacterium as their invariable underlying factor. Tuberculosis, like influenza almost always appears as a mixed infection. Measles, smallpox, and scarlatina, appear to be drifting, more by dint of fashionable tendency than by reason of any definite demonstration into the streptococcic fold. Only diphtheria, typhoid fever, and syphilis (already mentioned) furnish clinical cardiac conditions distinctive, even in a measure of a definitely recognized organism and demonstrably characteristic lesions.

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[1] *Am. Jour. Med. Sci.*, 1914, p. 37.

Roughly speaking, we may generalize or group the harmful effects of the activity of these agents in all of the acute diseases into those of (1) acute true myocarditis, (2) myocardial atony due to degenerative change, (3) toxic paralysis or paresis of the cardiac muscles and nerve fibers, (4) endocarditis (valvular and mural), (5) simple and mediastino-pericarditis, and (6) muscular and valvular insufficiencies with dilatation of the cardiac chambers.

I make no reference here to the sclerotic changes that may or may not have had their beginnings in an infectious thromboarteritis of the vaso vasorum during the acute disease. Nor may we stop to consider the many post-convalescence developments that may easily be traced back to the acute infection of weeks or months previous. I shall not even dwell upon the central involvement of the vasomotor system, the importance of which has, until the recent reaction, been exaggerated beyond all warrant. I have shown in another place[2] that in the pneumonias at least the diastolic blood pressure (the best index of vasomotor tone) maintains a fairly normal level. Schwarzmann[3] has recently come to similar conclusions with respect to eighty cases of the various acute infectious diseases.

ACUTE TRUE MYOCARDITIS.

True inflammatory involvement of the myocardium varies in type and extent in the acute infectious diseases from the simplest edematous infiltration or localized round-cell infiltration to the characteristic nodules of Aschoff, found in the hearts of subjects suffering from genuine rheumatism and chorea. There may be evidences in the myocardium of attacks antedating that which proves fatal, such as areas of old fibrous tissue, side by side with new inflammatory processes, or such as the scars and fibrous patches representing healed Aschoff's bodies, accompanying newly formed and typical giant-cell colonies. If the heart has previously been free from disease, the musculature of the left ventricle is most likely to suffer. It may however be the right ventricular wall, or the muscular ring supporting the aortic and mitral valves, or the atrioventricular bundle, or that less commonly known tract of transmitting fibers described by Kent as existing in the right lateral cardiac wall. Here, there, or everywhere the lightning may strike and leave its fingermark.

The vital point to which I would here call attention is that whether the infection be a pneumonia, a gonococcemia, a rheumatism (so-called), an invasion by the streptococcus mitis (viridans) or by the homely staphylococcus, if it become general and severe, the cardiac musculature invariably suffers and the microscope will reveal lesions competent to explain many features of the clinical picture. Once this fact is appreciated as a general principle, we will cease emphasizing the all-importance of a loss of vasomotor tone, especially since, as in most pneumonias, the vasomotor tone is not low. Moreover, we will be more likely from the beginning to watch intelligently and closely for the early signs of cardiac irritability, and later for indications of cardiac distress. A weak, irregular pulse, air hunger, pain that can not be definitely attributed to pericarditis, precordial oppression, will all have a new significance when we realize that the main lesion even in rheumatism is of the myocardium, not of the valves, and is just as likely to be permanent as if it were valvular. Acute syphilis is as likely to cripple the myocardium as the valvular structures, and to leave unmistakable evidence of the nature of the process in the presence of the spirochete. The changes may be interstitial or parenchymatous or both, and may vary in grade from an edema to fatty degeneration. Except in the late fibroid lesions the spirochete will usually be found. Very rarely does the heart of syphilis escape being also the heart of myocardial disease.

In a brief paper it is manifestly impossible to cover thoroughly the ground suggested by the myocarditis of acute infectious disease. One can, however, and should have instantly brought to mind when diphtheria presents itself, the fatty degeneration of the fibers and the paralysis of the cardiac nervous mechanism, even more vividly than the localization of the membrane in the pharynx, larynx, and nose. In typhoid fever the hyaline or waxy degeneration (Zenker) of the fibers is not to be forgotten. In the pneumonias, I have elsewhere shown that we may confidently expect any or every grade of degenerative change. In influenza many patients die in their convalescence as the result of fatty myocardial change. In true rheumatism we find not only any or all of the changes mentioned above, but in addition the suggestive, if not pathognomonic nodules of Aschoff in and around the adventitia of the small subendocardial vessels, in the interstitial substance between the fibers, even in the valve structures themselves. I have seen two instances of suppurative involvement of the cardiac muscle, both in cases of pyemia, the one an example of extensive suppurative myocarditis and the other of multiple abscesses of the heart wall. Cases of this sort are always fatal, and are diagnosed by generalization only, or on the autopsy table.

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[2] *Jour. A. M. A.*, Sept. 19, 1914.
[3] *Zentralblatt für Innere Med.*, Aug. 1, 1914.

Whether full cardiac recovery follows even the milder grades of infectious inflammation, and whether a heart so involved is ever again quite ready to perform full service, I think we may, on the basis of the foregoing, very well doubt. For ordinary purposes it may answer every need. When the stress comes, just as during the primary acute illness, it may be taxed just a little beyond its capability, even though well within normal limits, and fail the patient at a time in which he needs every reserve force and energy. In the form of atrophied or degenerated fibers or localized areas of fibrosis the heart may preserve its record of the storm. Many a physician has experienced a severe clinical lesson in the loss of a patient owing to sudden cardiac failure when convalescence has seemed almost or quite complete, even when the primary disease has been not oversevere. Weill and Mouriquand[4] have reported a series of such instances in convalescents from scarlatina. In one case, a girl of fifteen years, died suddenly at stool. Another child, an infant of eighteen months, died suddenly when it seemed past all need for worry. The microscope revealed an acute myocardial inflammation as the cause of the fatality. Far more frequently does diphtheria cause such an end.

It would seem then that the heart muscle is of primary interest in the acute infectious diseases, and deserving of more than ordinary concern.

MYOCARDIAL ATONY DUE TO DEGENERATIVE CHANGE.

The various forms of degeneration noted in the myocardium of infectious disease have already been briefly mentioned. They all lead to some measure of disability and incompetence, mainly as a consequence of a loss of muscular tone. This quality or function of being fit, or, to use athletic parlance, "on one's toes," is as essential to cardiac equilibrium as it is to the performance of an individual's daily work. If he possess that indescribable something which insures his mental and physical grasp of things, the vital tension that furnishes both energy and endurance, he enjoys the tasks of the day. He is a giant and they are the duties of a Lilliputian. Exactly so with the cardiac muscle. If tone is lacking, every emergency is a new burden. We must not forget, moreover, that the arterial system is simply a continuation of the structural architecture of the heart. That which lowers cardiac muscular tone, is almost certain to have the same influence upon the muscle fibers in the walls of the arteries and veins.

Each step toward myocardial degeneration, cloudy swelling, hypertrophy, perhaps at its side atrophy of the fibers, fatty change, hyaline metamorphosis, replacement fibrosis, calcification; all of these represent incapacity through inability to sustain tone. In addition there is likely to be a diminished supply of an infected and chemically altered blood. It is little wonder that tone and accomplishment are both impossible under these conditions.

TOXIC PARALYSIS OR PARESIS OF THE CARDIAC MUSCLE AND NERVE FIBERS.

There are many indications that either or both the vagus and the sympathetic cardiac systems of nerves may be embarrassed or completely paralyzed by the toxins of the acute infectious diseases. It is well known that drugs that ordinarily affect and stimulate the vagus branches to the heart fail to exert their usual influence under the shadow of an active toxemia. Physiologic conditions are abnormal. More and more frequent are the reported instances of so-called functional heart block in pneumonia, in rheumatism, in syphilis, and in other acute toxemias. In some of these instances the lesion has been shown to be a round-cell infiltration of the auriculoventricular connecting fibers. As long ago as 1905 Mackenzie[5] called attention to the occurrence of partial heart block in influenza. In other temporary cases which have clinically recovered the disturbing influence has appeared to be wholly toxic, and has seemingly been exerted through both the muscular and nervous tissues. In one of Routier's rheumatism cases[6] recently reported, a heart block disappeared under the influence of atropin; in a second case, one of pneumonia, without treatment. In a case of heart block in rheumatism reported by Gosse[7] the loss of function persisted in spite of treatment, for eighteen days. Occasionally temporary heart block is noted in a case which at length comes to autopsy, when there appears to be an entire absence of explanatory and causative lesion. It would seem, however, that a more diligent search might discover evidences that escape the ordinary observer.

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[4] *Presse Médicale*, Aug. 5, 1911.

Auricular fibrillation and flutter are not rare phenomena in the toxic heart. While not essentially toxic disturbances, as is demonstrated by their appearance in a dying (normal) heart after removal from the laboratory animal's body, there is no question but that the toxins of the acute infectious diseases may and do bring the same conditions to pass. Sutherland[8] has just published an interesting study of auricular flutter in acute rheumatic carditis, and of the clinical signs indicating the presence of this condition.

ENDOCARDITIS (VALVULAR AND MURAL).

Rheumatism (tonsillitis, arthritis, chorea) and syphilis are recognized as the two most frequent causes of valvular heart disease. We are, however, just now in the transition stage with respect to the meaning of "rheumatism," and its relation to the streptococcus in general, to the streptococcus viridans in particular, and to many other forms of subacute and acute bacterial endocarditis. Typhoid fever, pneumonia, influenza, diphtheria, tuberculosis occasionally involve the valves, but show a marked predilection for the myocardium. Scarlatina very frequently is found to have antedated a valve lesion that appears to have no other explanation. If scarlatina is finally pigeonholed in the category of streptococcic infections, we shall have the needed explanation for this probable etiologic sequence. We seem bound in the near future to discard the term "rheumatism." Certainly no one has the unscientific privilege of believing, and still less of asserting, as did one critic who wrote to me recently of a number of cases of valvular disease with an entire absence of rheumatic history (arthritis, sore throat, tonsillitis, or chorea), "Your cases were rheumatic, I believe"; I repeat, no one has the privilege of throwing every etiologically obscure case of valvular disease into the rheumatic dump heap, at least until the pale spirochete has been proven absent, and probably not then. We can and should catalogue the myocardial as well as the valvular lesions that have heretofore been ascribed to "rheumatism" under their proper etiologic classification. Whether or not we shall eventually limit the meaning of the term rheumatism to hearts showing Aschoff's nodules remains to be determined. Acute syphilitic lesions of the valves or of the myocardium may indeed often be diagnosed by the presence of the *Spirochaeta pallida*. In old and chronic lesions this diagnostic help may not be afforded. The etiologic significance of the other above-mentioned acute infections can only be ascertained by a careful clinical following of the heart during the acute attack, and by comparison with its known previous state. Whatever the causal factor in a given infectious disease the endocardial lesion follows one of two or three lines. Either it begins and persists as an inflammatory change in which fibrosis is the ultimate outcome, or vegetative deposits and growths appear, or, finally, the vegetative and ulcerative processes of malignant endocarditis manifest themselves. Any one of the infections may initiate any of the three types of mural or valvular endocarditis, sclerotic, vegetative, or ulcerative. Rheumatism and the typically acute diseases (except gonococcemia) tend to the production of the vegetative, recurrent type. Syphilis, on the other hand, leans toward sclerosis from its beginning to its final deformity. More and more clinicians are to be found who believe that in the absence of a known causative factor a valvular lesion of either of the two more chronic types should be suspected of being syphilitic until proven due to some other etiologic influence. In the presence of fibrous arteries in a young person the presumption becomes almost a certainty.

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[5] *Brit. Med. Jour.*, 1905. pp. 519, 587, 702. 759, 812.
[6] *Arch. des Mal. du Coeur*, May, 1914.
[7] *Brit. Med. Jour.*, June 20, 1914.
[8] *Brit. Jour. of Children's Dis.*, Aug., 1914.

The endocardial lesion may consist of a filmy lymph deposit upon the line of junction of the cusps; or it may result in the stoppage of the passageway by a projecting mass; or the cusps may be shriveled and warped and noduled out of shape and position; or, finally, ulcerative processes may have eaten their way through. Endocarditis may thus constitute a mere baptism, or it may mean a destructive involvement that stops short only when the tissues are consumed.

PERICARDITIS.

As the pericardium enjoys the same general blood supply as the myocardium and the valves there is little chance of its escaping involvement by any and every infectious process that is blood-borne. Many writers and teachers are skeptical regarding the occurrence of a primary pericarditis. No one questions the frequency of the toxemic or of the bacteriemic forms. Indeed contiguity to the pleura as well as to the myocardium would almost render a primary form of pericarditis unnecessary to explain the origin of the vast majority of instances. Conditions are so favorable to a direct extension of an inflammatory process from one structure to another that this would seem the natural order of events. As a matter of fact it is an exceptional case of fatality from the acute infectious diseases that fails to show at the autopsy definite evidence of pericardial inflammation. Often a mere fibrinous patch, more frequently also an excess of pericardial fluid, rarely a purulent effusion, it would be almost an anomaly were the pericardium to be found free, when the structures so intimately associated with it are involved. Pericarditis occurs in children at an early age. Blechmann[9] in studying 500 cases of pericarditis in the London Hospitals found that twenty-five per cent. of all occurred earlier than the fifth year, and fifty per cent. before the fifteenth year, The toxemias in rheumatism and in the pneumonias are the most frequent causes, though all of the eruptive diseases contribute to the total. Heretofore rheumatism has been cited as the infection most active in the causation of pericarditis. When, however, we finally learn to discriminate between true rheumatism and other septic arthritides, when, indeed, we discover just what true rheumatism is, we shall probably find that it is not the cause of many cases that have been included under its name. In a series of sixty-seven cases of serofibrinous pericarditis in the University and Bellevue Hospital, Brooks[10] found twenty-six secondary to pneumonia, which led the field as a causative factor.

In early adult life nephritis begins to contribute a very positive percentage of cases. Many of the mediastinal inflammatory conditions also exert an influence. It must not be forgotten that the heart and the pericardium rest posteriorly upon the esophagus and aorta, and that anteriorly the pericardium is intimately attached to the pleura. In a considerable number of instances of both acute and chronic tuberculosis the pericardium is found at the autopsy the seat of active tuberculous disease. Scarlatina, cerebrospinal fever, influenza, erysipelas, and syphilis, all contribute their quota, and bear out the assertion that whatever infests the blood stream finds it difficult to pass the pericardium by.

MUSCULAR AND VALVULAR INSUFFICIENCIES WITH CARDIAC DILATATION.

Only a word need be added with regard to the direct etiology as contrasted with the symptomatology of the insufficiencies (muscular and valvular) of the hearts in subjects suffering from the acute infectious diseases.

We were all taught, and later at some time no doubt began to teach, that the dilated heart usually is incompetent as the result of the misbehavior of some one valve or valves. In fact, in the study of both the acute and chronic heart lesions we have been led to over emphasize the importance of the valvular abnormality and to ignore in a measure the significance of the covering and substance of the organ. We forget that the same condition or infection has caused both the endo- and myocarditis. To-day it would be well for us all to take up again the study of the histopathology of the heart muscle, not with a view to exaggerating the frequency of cardiac disease, but of placing and locating the point of attack, and appraising the etiologic bearing of the infections to acute involvements of the myocardium. There is an unfortunate tendency among heart students to teach the needlessness of fear of athletic overstrain or damage to a heart which shows no frank signs of cardiac disease. In the light of this study it would be well worth a young man's time and trouble to have his physician inquire into his past history with reference to the acute infectious diseases, and a possible latent structural insufficiency of the cardiac muscle. We constantly hear of young athletes being hurried from their convalescence from a tonsillitis, or even a typhoid fever, into training, and thence into an eight-oared race or a football match. More than once I have personally come into conflict with a medical director of a school or college who appeared willing to permit some young giant, though already suffering from airhunger and cardiac arhythmia evident to the patient, to engage in athletics no less strenuous than a football contest or a cross-country run.

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[9] *Annales de Med. et Chirurg. Infant.*, July 1, 1913.

[10] *Am. Jour. Med. Sci.*, 1909, p. 796.

TREATMENT AND PROGNOSIS.

What is the treatment and what the prognosis of a carditis such as one must expect in an acute infectious disease. I would suggest in a word for the acute illness the most perfect possible rest, and the saving of every unnecessary contraction of an organ which we unfortunately can not ever put to sleep. At the beginning of treatment an empty, and, for a little time, an "as-nearly-as-possible" sterile gastrointestinal tube will be the second essential, instead of the frequent attempt to overnourish and feed. Drugs, except opium, and possibly atropin, will be of questionable value. If employed at all they should be such as are calculated to subdue and quiet overeffort rather than incite and excite a lame organ to further exertion. No drug will decide the issue between cardiac competence and collapse. It may be that even the cardiac sedatives and tonics had better be omitted. The most difficult period for the physician will be the immediate convalescence, and the year following the acute illness. If we would conserve the heart muscle and its endocardium it will be of prime importance that all localized foci of infection should be removed from the body. We are just beginning to appreciate the fact that diseased tonsils and adenoids invite a heart lesion, a pulmonary tuberculosis, or a pneumonia; that pus tubes or an infected prostate may underlie malignant endocarditis or a joint rheumatism; and that a grumbling appendix may be the cause of arteriosclerosis, myocardial degeneration, arthritis deformans, or varicose veins. In short it is not safe from any standpoint to ignore a chronic focus of disease.

Very gradual must be the progress in dispensing liberty and freedom to a convalescent from an acute infection in his venture back toward a normal life. Very thorough and intelligent must be the physician's test of the heart's capabilities before the patient is turned over completely to his own direction and guidance. Long after the acute attack has been forgotten the heart muscle may betray a latent disability that has lingered and escaped suspicion. Fortunate the man or woman that enjoys a full convalescence and an adult life of uninterrupted health following the damage sustained by the cardiac structure in the infectious diseases of an earlier age.

DISCUSSION.

Dr. William E. Robertson, Philadelphia: I did not have the privilege of reading Dr. Willson'spaper, though I discussed the topic with him for a few minutes this morning. He has given us a splendid résumé, and in the lantern slides, indubitable evidence of readily recognizable histopathologic changes which must play an immediate and probably a remote part in the economy. When pathologist to the Episcopal hospital of Philadelphia and, like Dr. Willson, interested in cardiac disease, I had abundant opportunity to study the gross and microscopic changes in the heart, having made in all a little over 600 necropsies and numerous microscopic observations. I can confirm all that has been said by Dr. Willson. In every infection of any character whether of short or long duration, and more or less in proportion to the intensity of the underlying disease, the heart muscle is involved whether the valves be claimed or not.

It has always seemed to me that the general tendency is to direct attention rather to the heart valves than to the state of the muscle itself, despite the very well-known fact that even considerable degrees of valve destruction are not incompatible with long life. The mere presence of a murmur is never in itself sufficient to justify treatment. The important points are, first, to bear in mind that any infection results in more or less immediate damage to the heart muscle, with or without valvular involvement, and that, as a corollary, the second observation is the necessity for rest. It is a curious fact that the oldest medical papyrus extant written by Iem Hotep, an Egyptian priest physician, about 6000 years ago, dwells upon the importance of rest in the treatment of heart disease. Incidently, also, he adumbrates the discovery of the circulation of the blood by referring to the possibility of depositions in various parts of the body of putrid material, having been carried by the blood. In addition to rheumatism, chorea and the exanthemata, it must not be forgotten that chronic sinus disease, smouldering gall bladder affections and chronic appendicitis may furnish a starting point for disease of the heart muscle or valves, or both. The importance of gall bladder infections in the production of myocardial changes has been especially insisted upon by Babcock of Chicago. Unfortunately, we possess no distinctive criterion which will enable us to recognize the earliest evidences of a failing myocardium. Every normal organ is possessed of a functional capacity far in excess of legitimate demands. MacKenzie speaks of this capacity as "the field of cardiac response." When that is encroached upon by disease of the muscle, an increase in cardiac rate, with or without arhythmia, a progressive weakening of the first sound and pallor are among the first evidences. It is safer, however, not to attempt to estimate the functional capacity, but to bear in mind in all instances of infection of any character, that the heart is more or less involved, and to give the patient the benefit of prolonged rest and a concentrated nutritious diet rather than bulky liquids, in preference to the employment of drugs. Drugs have a very limited field of usefulness.

Dr. Thomas R. Currie, Philadelphia: As a general practitioner I have often been distressed and puzzled by an occasional very prolonged convalescence after the infectious fevers. This demonstration by Dr. Willson of intermuscular hemorrhage—atrophy and fragmentation of muscles of heart, helps to give the explanation. In cases of muscular rheumatism if, as seems probable, rheumatism is falling under streptococcic etiology is afforded a ready explanation and emphasizes the need of more prolonged rest made so emphatic by Dr. Robertson.

Dr. John W. Boyce, Pittsburgh: The histopathology of the heart in acute infections is, indeed, a most interesting subject. If clinicians have neglected it, it is not through ignorance of the fact that the changes described by Dr. Willson occur in the heart, and indeed, in all the parenchymatous organs, in all acute infections; at least, in all fatal cases. To say that the nonfatal infections always leave a damage, would be an assumption unless, by examination of the heart of a man dying past middle life, we could invariably tell whether he had ever had an acute infection or not.

The aspect of this subject which discourages the general practitioner is that these changes occur in all cases, in those that have died a respiratory death quite as much as in those that have died at the heart. I will ask Dr. Willson if it is not true that he has seen just such changes well marked in a case, say of typhoid fever, in which the patient has done well with no especial evidence of circulatory weakness until he died suddenly of intestinal perforation. I know that this is true in chronic myocardial change. In every one dying past middle life careful microscopic search will show some evidence of degeneration, but the degree of change bears no necessary proportion to the apparent efficiency of the heart during life. In the pathological museum the extreme example of cardiac myopathy possibly comes from an unusually husky individual who was run over by a brewer's wagon and the specimen comes from the coroner who presents it merely because it is an interesting specimen. On the other hand, the man who has died of sudden and unaccountable "heart failure" or the one in whom we have diagnosed myocarditis, may present only a slight degree of change such as is observable only on careful study.

The clinician would be only too gland to engage in any line of study which would enable him to determine with even approximate accuracy the dynamic efficiency or the reserve power of the heart, but for the present we see no hopeful indications. MacKenzie's symptom of the "field of cardiac response" has been referred to. When we are certain that our patient's symptoms are due to myocardial change this symptom is a valuable index of the degree of this change. Unfortunately it is equally well marked in the cardiac myopath, in the neuropath whose attention has been turned to the precordial region, and in the patient who manifests distress on moderate activity merely because he is overfed and under-exercised. The management of these classes differs diametrically, and discrimination is most important. I wish again to express my opinion that correct diagnosis is most apt to be attained by the general practitioner who considers the general make-up of his patient rather than by the specialist or consultant who sees him only once and relies on more exact methods of local examination.

Dr. Willson, closing: I am reminded, somewhat, by Dr. Boyce's remarks of a story often told of Daniel Webster. He was in charge of a case, the decision of which hinged upon the difference in size of two wheels. His opposing counsel (Choate, I think) argued brilliantly for over two hours to prove that the wheels were of the same size. Finally, when it came Webster's turn to reply, he had the two wheels rolled into the courtroom, and turning to the jury simply said, "Gentlemen, there are the wheels, decide for yourselves," and won his case. So with the lesions in the heart resulting from the toxemias in the acute infections. You have seen the evidence of damage to the cardiac structures, as pictured in my slides. I simply repeat, "There are the wheels, Gentlemen, decide for yourselves!" Each hemorrhage is either absorbed or else it forms a minute fibrous patch, a scar. The atrophied fibers remain weakened fibers, and can not be rehabilitated. The degenerated muscle tissue will in many places be replaced by connective tissue. All of these will form weak links in the chain of cardiac forces that may later be called upon to withstand an overstrain in athletics, in a pneumonia, or in some other grave crisis in which a truly healthy cardiac musculature is a tower of support and refuge. No one will question the frequent usefulness of a heart that has weathered an acute infectious disease. It is my object to point out the fact that it is no longer a normal or a thoroughly intact organ, and that it calls for a consideration that has not been accorded it in the past.

DUCTLESS GLAND IRREGULARITIES IN BACKWARD CHILDREN.

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(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

I limit the term "backward" to those cases of retardation, mental defect or mental deficiency in which restoration to normal is possible under appropriate treatment, medical, hygienic or educational (the last considered in its widest sense). True feeble-mindedness of any degree, though improvable, is incurable. In many instances the two classes possess points of similarity which makes differential diagnosis a matter of some difficulty. This difficulty is aggravated by the looseness of nomenclature and inadequacy of definition.

The feeble-minded child can never through any system of treatment, education or training become a useful member of society in the station in life into which he was born. The backward child may, though, if neglected, his mental development may remain at a standstill or even retrogress until his condition becomes essentially the same as that of the feeble-minded.

I believe we are justified in postponing our diagnosis of feeble-mindedness in carefully selected members of one class of individuals and tentatively classifying them as backward until we have exhausted every therapeutic measure at our command. These are the ones in whom developmental anomalies suggest deficiency or irregularity of action of one or more of the glands of internal secretion.

It is now pretty generally conceded that the chain of ductless glands is of the greatest importance in the development of the cerebrospinal and osseous systems in early life, and that impairment of the functions of one or another of these glands underlies the disorders of nutrition which inhibit proper development.

While our knowledge as to the normal action of these glands is still somewhat hazy, yet one finds that they in some manner preside over certain correlations of the body. These correlations are exceedingly variable and this variability is most apparent when circumstances are abnormal. The adjusting mechanism of development is more or less reciprocal; thus, a ductless gland not only influences development but is itself influenced by the changes of general development. There is reason to suppose that, in the harmony which is produced by the concerted action of the ductless glands, the leading rôle is played by the thyroid, which supplies the stimulus for bodily metabolism. As a check upon the influence of the thyroid in infancy and childhood the thymus, the general lymphatic system and perhaps the pineal gland become active. In addition these produce that delay of sexual activity which is essential to the proper maturation and stability of the somatic functions. In due time the adrenal system stimulates the sexual organs to action as well as hastening the growth of the muscular and skeletal systems. Of great importance at this time is the action of the secretion from the pituitary gland which stimulates the development of every organ in the body. This much may be postulated regarding the influence of the action of the internal secretions upon somatic development; their influence upon psychic development is shrouded in a greater degree of obscurity, though the state of our knowledge is rapidly increasing.

It is seldom, if ever, that we find a case of defective development in which the anomaly can be attributed exclusively to irregularity of action of one gland. Even in cretinism there is some doubt as to whether hypothyroidism is the only factor, as this condition is accompanied by an enlarged pituitary; though, as the pituitary tends to increase in size in thyroidectomized animals, this enlargement may be secondary to the primary thyroid anomaly and compensatory in its nature. Halsted[1] has convincing evidence that the thymus gland plays an important part in exophthalmic goiter, and may in some cases assume the title rôle. In short, it may be said that, even in the acquired forms of ductless gland disorder, occurring in a gland previously healthy and due to infection, trauma, etc., disturbance of one of the chain throws all the rest more or less out of harmony with resulting variation and retardation in development. The majority of all backward children in whom the backwardness is not due to accidental causes, as illness, lack of training and other purely environmental influences, present evidence of ductless gland irregularity, sometimes emphasized in one particular gland. This involvement may be due to causes which may be distinctly hereditary in origin or to antenatal influences affecting the child *in utero*. Quoting from a previous paper[2] "Conditions having a vitiating influence upon cell development, as tuberculosis, syphilis, cancer, chemical poisons, malaria, alcoholism, drug habits, insanity, goiter, malnutrition, and environmental influences of various kinds occurring in the progenitors, result in imperfect growth of the developing embryo. In the first few weeks of fetal life, when the ductless glands begin to appear, the cells of which they are composed also grow imperfectly; and, unable to secrete to the extent to which they were destined, further defective development ensues and we have as a result infantilism, hypoplasia, degeneracy, call it what you will, in varying degree."

Of these terms I prefer "hypoplasia." Infantilism, properly qualified as "thyroid infantilism," "pituitary infantilism," etc., conveys the impression of a clinical entity. "Degeneracy" from long misuse carries with it a stigma of moral obliquity. "Hypoplasia" seems to be a generic term admitting of wide application. Hypoplasia may affect any organ or any structure and to almost any degree. Thus hypoplasia of the nervous system gives us the idiot as one extreme and the child designated simply as of neurotic makeup as the other. The various stigmata of degeneracy are somatic manifestations of hypoplasia. Certain neuroses and psychoses, drug habits, alcoholism, etc., if not the direct result are prone to occur in individuals presenting symptoms of hypoplasia of the nervous system in greater or lesser degree. Chlorosis, appendicitis, tuberculosis and a host of other dyscrasias, diathesis, infections and morbid states are common in the hypoplastic.

The hypoplastic backward child is distinguished from his normally constituted fellow by anatomical, physiological and psychical characteristics, the interpretation of which will serve to implicate the glands of internal secretion as a factor of etiological significance. The clinical picture most often seen is the undersized, undernourished child whose unstable nervous system is still further handicapped by reflex disturbances arising from nasal obstruction, defective vision, or perhaps phimosis. These conditions are often looked upon as direct causes of backwardness. They should be considered as evidences of evolutional hypoplasia. Other symptoms are delayed epiphyseal union as revealed by the *x*-ray, tardy dentition and abnormalities in growth of hair. Deficiency of the eyebrows in the outer third, the *signe du sourcil* is considered a symptom of thyroid insufficiency. Delayed sexual development is common, though sexual precocity is found, hinting at hypophyseal involvement. Premature eroticism leading to masturbation and perversions of the sexual instinct are of frequent occurrence in hypoplastic children. In some cases early development of libido seems to be due to hyperthyroidism, as I have found an overacting thyroid in practically every girl I have examined in Juvenile Court accused of offences to sexual morality.

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[1] W. S. Halsted: "Significance of the Thymus in Exophthalmic Goiter," *Bulletin Johns Hopkins Hospital*, Aug., 1914.

The high-arched palate, produced by the yielding of the palatine bones owing to their relative poverty in calcium salts, is a fairly constant symptom of hypoplasia. Dental malocclusions are likewise common. Enuresis is not infrequent. Variations in bodily temperature are found. In hypothyroidism, especially, the temperature is apt to be subnormal at times, with cold extremities, clammy skin, and chilliness, evidences of deficient oxidation and nutrition. Low blood pressure, Sergent's white line, adynamia, sometimes with slight bronzing of the skin, and decreased resistance to infection point to underdevelopment of the adrenals. Anomalies of bony development hint at absence or defective function of the thymus. That defective development of the thymus must be seriously considered in some cases of defective mental development is shown by the statement of Morel[3] that "seventy-five per cent. of idiotic children with normal thyroids, meninges, and nerve centers possess no thymus. Thus at Bicétre, from 1890 to 1903 autopsies of 408 nonmyxedematous idiots ranging in age mostly from one to five years (none being above fifteen years) showed the thymus present in 104 instances." He believes that in view of the occurrence of idiocy in dogs in which the thymus has been extirpated shortly after birth, that congenital absence of the thymus is actually the cause of the idiocy. Hyperthymism, in which the toxic action would seem to occur by reason of the secretion being either quantitatively or qualitatively abnormal presents the following characteristic features: (1) Pale skin, scanty hair covering, exaggerated panniculus adiposus, and poor development of the genital glands and adnexa; (2) hyperplasia of the various groups of lymph-nodes (neck, axillæ and mesentery); (3) hyperplasia of the tonsils; (4) hyperplasia of the lymphoid follicles of the nasopharynx, base of the tongue, and intestinal wall; (5) hyperplasia of the spleen; (6) hyperplasia of the thymus; (7) cardioaortic aplasia; (8) lymphocytosis, etc. These stigmata are seldom all present at once.[4] I have not found attempts at determining the condition of functional activity or of the size of the thymus gland to be particularly satisfactory. Though successful attempts to obtain a shadow by the roentgen rays have been reported, neither Dr. Schaefer, who has kindly radiographed my cases, nor myself has been able to substantiate these findings. Karl Basch and Adolph Rahn report a similar experience.[5] These authors describe a method of auscultatory percussion, a refinement of the Blumenreich technic, which they found very satisfactory.

The study of the child is not complete without a radiograph of the region of the sella turcica, to determine possible deformation of this structure with resulting dyspituitarism. The findings must be interpreted with reference to symptoms of disorder of this gland as well as their relation to other glands of internal secretion. A small sella will often be found in children of retarded physical and mental development with infantile characteristics approaching the *type Lorain* or the dystrophia adiposogenitalis type of Froehlich. In some there is an enlargement of the clinoid processes, particularly the posterior, practically closing the space. This I have found almost constant in epilepsy (confirming Johnston's observations[6]). I have also noticed it in children without epileptic history, but who present evidence of mental instability. I recently observed an unusually large sella in a boy of fourteen who showed sexual precocity, an unusual growth of hair and unusual muscular development. This boy, though so-called standardized tests showed him to be of normal mental capacity, had the mental attitude of the habitual tramp; dislike of sustained effort, love of change and travel, etc. Another boy, this one of fifteen years, with a large sella, with marked prognathism and large flattened nose, showing some retardation in sexual development, and, re-

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[2] "Ductless Gland Irregularities in Backward Children," *Interstate Medical Journal*, Aug., 1914.

[3] L. Morel: "Thymic Syndromes," *Monthly Cyclopedia and Medical Bulletin*, June, 1914.

[4] Paltauf.

[5] Karl Basch and Adolph Rahn: "Physical Evidence of the Thymus," *American Journal of the Diseases of Children*, Sept., 1913.

[6] George C. Johnston: "The Pituitary Gland in its Relation to Epilepsy," *Surgery, Gynecology and Obstetrics*, April, 1914.

sponding poorly to tests, under continued observation showed a sense of responsibility and degree of application unusual at his age. In fact, radiographic studies of the sella turcica present an interesting field for the study of the phenomena of retardation and deviation. The findings must, however, be interpreted with caution, at least until a large mass of material has enabled us to judge just what constitutes a normal structure and what are the variations. Myself and co-workers at the Pedological Clinic are having radiographs made of practically every case presenting anomalies of growth, which material will later be made the basis of a paper.

TREATMENT.

We are far removed from the crude empiricism of the days of Brown-Séquard and his over enthusiastic followers. A fund of knowledge has been acquired that has placed organotherapy upon a rational foundation and furnished concise indications for the administration of definite gland extracts in definite diseased states.

In the class of cases which we are considering the indications are not so definite and the administration of glandular extracts must for the present be upon more or less empirical grounds.

As has been mentioned it is seldom that we observe a case in which the anomaly can be attributed to irregularity of action of one particular gland, though there are numerous cases in which the symptoms involving one gland are more prominent. With a polyglandular condition to treat, the indication is for polyopotherapy. I am in the habit of administering to such cases small doses of pituitary, thymus, thyroid and suprarenal glands. For males, testicular extract is added, for females ovarian and mammary. The usual result is improvement in nutrition, increase in growth rate, increase in blood pressure, decrease of pulse rate, and improvement in mentality. The thyroid should be omitted entirely or reduced to a minimum in cases showing the least evidence of hyperthyroidism. In some of this class of cases (of polyglandular syndrome) I have gotten practically the same results by the administration of thyroid, alone, and thymus alone. Improvement following the administration of glandular extracts has been reported by other observers, Dana and Berkeley[7] have reported the results of investigations which they carried on under a grant from the Rockefeller Institute. Pineal extract was fed to a number of defective children in which there was no grave organic brain defect. They believe that the pineal gland has a definite and important function; namely, that it promotes the development of the human nervous system, and they presume that it supplies a minute amount of intracellular ferment accelerating the growth of the gray matter of the brain. While in the cases which they report, mentality showed a steady and gratifying improvement lasting over the whole period of administration, such improvement, as reported, was no more marked than I have observed in cases treated as outlined above. It is my opinion that improvement results from the stimulation of metabolic processes by bringing into equilibrium the various glands through a common, though tangled, relationship, rather than through any selective action upon a particular gland.

When the symptoms pointing to one gland predominate, as in hypothyroidism, hypopituitarism, etc., the indications are more specific. I have known an apathetic, listless boy, who would take no part in the occupations of his school-fellows, transformed in a few weeks by small doses of thyroid into a lively, mischievous youngster. A little girl of three years, short, fat and stolid, who showed little desire to talk, was put upon thyroid extract with the result that her mother came to me a few weeks later with a request from the family that I give her something to stop her talking. In hypothyroidism with marked adynamia and other symptoms of deficiency of the adrenals, Taylor recommends that adrenal and thyroid extract be given together.[8] Kerley and Beebe report[9] a case of retarded physical development in a boy in which treatment by thymus extract apparently gave brilliant results. In other cases presenting infantile characteristic, pituitary extract is indicated, especially when positive symptoms of pituitary deficiency are present.

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[7] Charles L. Dana and William N. Berkeley: "The Functions of the Pineal Gland." *Medical Record*, May 10, 1913.

[8] J. Madison Taylor: "Development and Its Anomalies," McKee and Wells' Practical Pediatrics, Vol. 2, p. 1140.

[9] C. G. Kerley and S. P. Beebe: "A Case of Delayed Development in a Boy Treated with Thymus Gland," *American Journal of the Medical Sciences*, Aug., 1912.

DISCUSSION.

Dr. J. Madison Taylor, Philadelphia: Dr. McCready has made a second and valuable contribution to the aberrancies of growth depending on the ductless glands. I have tried to learn something about growth forces for several years, and corresponded with a number of prominent biologists and geneticists. So far there is little to work upon and the most promising domain is this one of endocrinology. Such contributions as these will aid materially in reaching practical conclusions. We now have data enough on which to base helpful working principles. Some of the clinical findings are based on sound conclusions, though most of our procedures are as yet in the main empirical.

There are afforded, so far, only the bare outlines of guiding principles. None the less results are rapidly growing in certitude. The most obvious need is exactness in diagnosis. I would urge closer observation of the acute disturbances involving the ductless glands. These doubtless occur only too frequently, and escape detection. Acute effects wrought by infections upon growth forces are inferred, but seldom described, hence we do not yet know much about those affecting the structures of the ductless glands.

I observed about twenty cases of acute thyroiditis occurring during an epidemic of measles at Blockley some years ago. The patients were promptly relieved by applying a collar of absorbent cotton and keeping this wet with ice water. I hope others will note similar conditions and describe them in detail.

Definitions in symptomatology of acute disturbances are much needed, as well as finer differentiations of the earlier chronic phenomena.

The pituitary, being biologically the osphradium or test-organ, is readily disturbed in function by hypertrophic development or disease. Also it probably, in functioning to sustain blood pressure by its secretions, stimulates the permeability of the adrenals and thyroid. Thus by driving exidation and anabolism at an inordinate rate from the pituitary it excites abnormal growth.

Excessive growth tends to occur in early life from the first to the eighth year, *e. g.* hydronephroma. Here a child of eight may become as large as an adult; the external genitalia are overdeveloped, hair on the pubes, etc., obesity, etc. Sajous is of the opinion that the adrenals supply the secretion which, as oxydizing agent of the hemoglobin, sustains tissue oxidation and the anabolic phase of metabolism, *i. e.* the tissue-building processes, particularly of the muscular elements.

It is only during the years of growth that the thyroid gland proves effective in increasing stature. Its influence on metabolism is the main factor in its beneficial effects; also it exerts some effect on enhancing calcium metabolism. It is through the influences they exert on metabolism and oxidation that the various ductless glands produce effects on growth and development. We must identify the particular signs of defect in each on both adrenals and thyroid to secure definite characteristic results.

Symptoms of adrenal deficiency occur in three forms: (1) Functional hypoadrenia: Various defective actions shown by tardy development in circulatory efficiency, aggravated by exhaustion-states, starvation, etc. (2) Progressive hypoadrenia: *e. g.*, Addison's disease, in its various degrees and forms. (3) Terminal hypoadrenia occurs in connection with infectious disease, toxemias, owing to exhaustion of the secretory activity of the adrenals, early in the infectious processes. (4) Thyroid deficiency, or hypothyroidea: Specific symptoms should always be estimated in connection with symptoms due to other causes.

Phenomena are often vague, weakness, asthenias shown by apathy, laziness, stupidity, obstinacy; any or all these should excite suspicion of defective thyroid action, asthenic disorders of the nutrition in the various phases, grades, and directions. The clinical picture is one of mental and physical retardation, depreciation of vigor, loss of cardiac and vascular tone, notably listlessness and absence of play-impulse. Usually there is some pain, not much, but can be elicited. The child is peevish, whimpers, is restless; temperature is low at times; extremities are cold, skin clammy with chilliness; in short the evidences are of defective oxidation.

The skin is often scaly below the knees, pits readily, is waxy, eyelids are puffy, on exertion occurs dyspnea, palpitations; the blood pressure is often low, pulse weak, quick, irregular. All sorts of mild blood changes occur; teeth defective, decay readily, owing to deficiency of calcium and phosphorus; resistance is low to germs and infections; nasopharynx is hypersusceptible, also tonsils; intestines are of lowered tone; the liver is passively congested, often enlarged; varicosities occur; bilious and renal colic; imperfect blood competence; urine is scanty, often slightly albuminous, some sugar; bones are weak; pigeon breast and rachitic deformities; scoliosis, flat-foot.

Loss of arteriole tone contributes to hallucinations of sight and sound; mind confused, or obtuse.

Dr. C. C. Wholey, Pittsburgh: Dr. McCready has given us an unusually clear statement of the position held to-day in relation to ductless gland metabolism. The men who are discovering and charting the clinical facts which may be correlated with normal and perverted ductless gland activities are contributing towards the solution of some of the most vexing and important of our medical problems.

Several of the points mentioned by Dr. McCready have suggested to me bearings which his studies may have upon certain of these problems, chiefly upon the mental side; and it is toward this mental phase of the matter that I shall direct my discussion. It has been well established that the various ductless gland secretions have an important influence upon the general body growth and development. It follows that mental growth and development are equally affected by whatever results accrue to the organism as a result of ductless gland metabolism. Indeed it is because of the mental symptoms, reflected in the individual's anomalous conduct, more often than for any other reasons, that the doctor's advice is sought in that borderland class of cases in which Dr. McCready has generally found evidence of ductless gland irregularities.

We know that any change in body chemistry is always recorded in altered brain activity, and this in altered conduct. The evidence of such alteration may elude the physician when slight, though present just as definitely as when it becomes grossly obvious. Men who are not psychiatrists have called attention to the numerous mental anomalies which they have found to be associated with ductless gland disturbance. Harvey Cushing in "The Pituitary Body and Its Disorders," lays much stress upon the mental and emotional disturbances observable in both animals and man as a result of hypo- and hyperpituitarism as well as in other ductless gland disorders. In cases of hyperpituitarism he speaks of the wakefulness, lack of concentration, indecisiveness, irritability, distrust, the inability to take an education, the general low mentality of giants, etc. He likens these manifestations of hyperpituitarism to the mental symptoms of dysthyroidism; likewise with hypopituitarism he says that all grades of mental disturbance occur, from mild psychoses to extreme mental derangement with epilepsy. Dr. Plummer of the Mayo clinic in a paper read at the Philadelphia Session, September 24, 1914, considers the mental symptoms characterising thyrotoxic disturbances as the most constant and significant, and calls particular attention to the accompanying irritability and depression. Marburg of Vienna, in discussing anomalies of the pineal gland (Modern Treatment of Nervous and Mental Diseases, White and Jelliffe, Vol. II., page 746), lays great emphasis upon the early sexual ripening characterizing hypopinealism. There are very marked and definite symptoms such as feelings of isolation, suggestibility, anxiety, etc., which are peculiar to Graves' disease and other hyperthyroid conditions. Often such mental symptoms exist for a long time before being recognized and may be traced back to early life. Dr. McCready's paper emphasizes the importance of correlating when possible the mental symptoms seen in anomalous children, with ductless gland disturbance.

In analyzing the mental reactions seeming to be initiated as a result of ductless gland malfunctioning, the mechanism of the process appears to receive explanation through a consideration of such facts as the following: The marked influence of ductless gland secretion upon the sexual instinct of the child has been mentioned in connection with the pineal gland. We also know that hyperthyroidism is often associated with marked eroticism. When the ripening of the sexual instinct comes about prematurely, it brings with it simultaneously significant alterations in the emotional life of the individual. There comes into play a heightening of the instinct for pleasure, and a switching of the emotions and desires into channels for which the child is unprepared and wholly without experience to meet adequately. Now the sexual instinct is inherently or biologically indifferent in regard to the object by which gratification may be obtained; thus it is a mere accidental happening as to whether in the developing child the impulse fixes itself upon the individual himself or upon one of the same sex, thereby resulting in various degrees of homosexuality and perversion. This is but one of the possible unfortunate results in cases of such abnormal development, in which the child has been an innocent and a purely passive and irresponsible agent. The appetite has come long before there has been any possibility for the development of those moral, social and hygienic feelings which ordinarily help in directing this instinct, with all its irradiations, into healthy channels. The child, as a consequence, generally finds himself compelled to retreat from an unfriendly and misunderstanding environment. He becomes secretive and self-absorbed at a time when his life should be wholly taken up with interests outside himself.

Similarly as in the above conditions where the pineal gland seems chiefly to be at fault we can trace out the development of dangerous mental reactions and habits of thought arising from early disturbances of the thyroid.

Sigmund Freud, working from the mental side, has discovered and verified the tremendous significance of early sexual traumata in the etiology of the neuroses and psychoses of later life. It seems to me that there is a significant connection between this fact and the facts regarding sexual disturbances, alluded to above; and there is considerable reason to believe that it is in these children showing the ductless gland disturbances that Freud finds evidences of sexual traumata of a mental nature. The emotional disturbances, sexual and otherwise, set going in these subjects of uneven development, will necessarily find expression in the so-called neurasthenias, hypochondrias, perversions, tics, obsessions, etc., now classed as the neuroses and psychoses.

Finally, it is more than a coincidence that we so frequently find evidences of perverted thyroid activity in cases of dementia præcox, and that this mental aberration so frequently finds its first outspoken manifestation following marked hyperthyroidism. The resemblances between certain phases of dementia præcox, particularly in the catatonic, and the milder mental anomalies seen in certain cases of perverted thyroidism, deserves more than passing comment. After this further allusion to mental disturbance and ductless gland anomaly, I shall quote Professor Bleuler of Zurich in "The Theory of Schizophrenic Negativism," Nervous and Mental Disease, Monograph, Series No. II., N. Y. He says in this treatise upon negativism, one of the pathognomonic evidences of dementia præcox, that the most important factor in its production is "the autistic withdrawing of the patient into his phantasies, which makes every influence acting from without comparatively an intolerable interruption." Only as of less significance in the causation of negativism he mentions "the misunderstanding of the surroundings" and "the sexuality with its ambivalent feeling tones." I know of no more likely soil for the development of the above mental anomaly than that found in these very subjects who furnish evidence of some ductless gland perversion.

Dr. Tom A. Williams, Washington, D. C.: Although it is sometimes stated that no matter what gland product is given a backward child, there will be improvement in growth and mentality whether the diagnosis is hypothyroidea or the adiposegenital syndrome, yet it will be dangerous to generalize of the few instances hitherto on record. For it must not be forgotten that the thyroid and hypophysis have some functions in common, and hence confusion between the two syndromes caused by their respective deficiency is apt to occur. For instance, I have now under observation a woman thought to be myxedematous, by so good an observer as Osler, twelve years ago, the progress of whose case shows a dyspituitarism so distinct as tc give the picture of acromegaly consisting of mandibular enlargement with prognathism, enlargement of the hands and feet, the latter by a size and a half; adiposis with paresthesia, characteristic central headache, asthenia and attacks such as described by Marks under the heading, acromegalic state.

Such confusions in children must be very difficult to avoid, and the explanation of an error of diagnosis should be first excluded before we venture to infer that it is a matter of indifference whether we prescribe gland products so different as iodothyroidin, chromaffin and posterior pituitary substance, even though we do admit the great power of nuclear products as stimulants to growth.

Concerning the thyroid juice, we have to remember that its chief function seems to be activation of chemical reactions already prepared, rather than an active participation in the metabolic equation. The hypothyroid child is merely sluggish, not idiot or demented; the physiological processes are not changed in kind but merely retarded. Even growth is not permanently arrested; and the proof of this is that thyroid feeding completely changes the clinical picture. Likewise, when the thyroid secretion is in excess, there is merely a speeding of the machine and its chemistry. It would seem that only when the speeding up preponderates upon some definite organ, which can pervert function, is there anything more than a hyper-metabolism.

For instance, the nymphomanic type of reaction so often seen in hyperthyroidism can not be due to that directly, but may be due to the increased labilisation of the ovarian secretion caused by the thyroid juice. I say "may be"; for we must take into account also the psychological determinants of sexual desire; and this will only be done when a series of proper analyses are made in such cases of hypothyroid nymphomania by men trained to weigh both the bodily and psychical factors in such cases.

I say this because of some experiences which indicate very strongly that the etiology of some cases of hyperthyroidism is in the main psychological; and also on account of the fact that states of fear, shame and anxiety which produce thyroid hyperactivation often have to do with psychological situations concerning their productive function.

But because of the diffusion of the thyroid juice throughout the circulating fluids, it must be remembered that it is ready to activate at once any organ whatever which happens to be extraneously stimulated at the moment. Accordingly, as the stimuli to productive activity are very abundant in community life, it is possible that the primitive factor of a psycho-sexual disorder may have to be sought for in an initial thyroid hyperactivation caused by a chemical agent, such as a toxin absorbed from the mucous membrane of the respiratory or digestive apparatus. The question can only be settled by the very careful analysis both physical and psychical of many cases.

For instance, a woman of twenty-eight with hyperthyroidism showing hyperplasia and eye-signs, referred to me for psychological treatment, could trace back characteristic psychological reactions to the age of thirteen, and associates them with the tremendous mental tension and anxious emotion created by constant friction between the father and mother.

To attribute far-reaching and profound disorders to a tight prepuce, a deviated nasal septum or errors of refraction or similar abnormalities supposed naively to create disturbances reflexly, is unworthy of the medicine of this day. Of course, I am alluding here to instances where refractive error causes so much extra effort as to overload, or where a twisted septum creates respiratory difficulties or venous stasis or where proper cleanliness is not secured because of a tight prepuce. None of these mechanisms are reflex, and all definitely demand interference. What I am referring to is the looseness with which the word reflex is impounded to serve as a cloak for ignorance of pathogenesis.

Dr. W. K. Walker, Pittsburgh: Dr. McCready has performed a distinct service in presenting this important subject in a manner which very clearly portrayed some of the essential somatic features of a class of cases which at different periods of life are brought to the notice of the psychiatrist. We now know that the glands of internal secretion play an important part in the chemical coördination of the body: Their imbalance is exhibited not only in perversion of bodily functions, but also in defect of cerebral cortical functions which, in early childhood, may be so marked that varying degrees of "retardation" are exhibited. Clearly grounded upon defect somewhere within the chain of ductless glands are milder psychotic states encountered in subjects which can not be said to be "retarded" in mental development. Especially in adolescence, the period of life marked by that new growth-impulse which leaves its impress upon both the bodily and the mental development of the individual, do we encounter clinical evidence of "disorders" in the mental sphere; these may vary from "moods" of elation, of depression or apathy, often mingled with various neurotic and psychotic symptoms, on to that special type of failure described under the term "dementia præcox." A goodly percentage of this latter group are undoubtedly recruited from these hypoplastic individuals.

Dr. W. E. Robertson, Philadelphia: There are two points to which I should like briefly to refer in connection with this subject. The first concerns the diagnosis. More exact diagnostic measures would permit of more definite therapy. From the clinical standpoint we view the subject more or less vaguely as we have so few criteria upon which to base a conclusion, hence the loose manner in which opotherapy is employed. I believe that more exact diagnosis would follow the use of the Abderhalden reaction in every case suspected of being of ductless gland origin. If we finally prove the existence of specific seroenzymes, this test should yield definite results, and some practical evidence to that end has already been adduced. The diagnosis made, the second point to which I wish to call attention, *viz.*, therapy, would of necessity be more definite. However, in nature the secretion of the ductless glands is poured directly into the blood stream. It would seem much more desirable, therefore, if we could procure these remedies for hypodermatic or, even better, for intravenous use. This latter would more closely mimic nature's method. There seems no doubt that, in the case of some of the ductless glands at least, when they are administered by the alimentary canal they are relatively or wholly inert.

A FEW COMMENTS UPON RENAL SURGERY.

BY W. D. HAMILTON, M.D.,
Columbus, Ohio.

The surgery of the kidney has made decided progress since Morris of Middlesex hospital, London, wrote, many years ago, his interesting and able articles upon stone and other surgical affections of the kidney. Diagnosis has been clarified and broadened; cystoscopy, catheterization of the ureters, the artificial distention of the latter with collargol to make them and the pelves delineable by the roentgen rays have been added. While in our own clinic no untoward results have occurred from the use of collargol, there have been some reports elsewhere of accidents following its use. While operative technic has improved, it is in the field of diagnosis that the more noteworthy progress has been made.

Under the old regime hydronephrosis was seldom suspected until the function of the kidney had been well-nigh destroyed by the conversion of the organ into a sac. Operation for that pathological condition meant often a nephrotomy if the kidney so affected was acutely inflamed, or not infrequently a nephrectomy if the patient's condition permitted. Hydronephrosis sometimes intermittent is now recognized, and that too with a demonstration of the causative obstructive influence sufficiently early to permit the organ after operative correction to undergo restoration. If it be intermittent, as in certain cases of kink of the ureter with a kidney that is movable, a cure may be possible and, too, the kidney be saved. There is not entire agreement as yet as to the exact cubic capacity of the normal renal pelvis. Standardization will no doubt result from a very large number of carefully made case observations.

An interesting and common fact in the clinical history in such cases is this: The painful attacks are not infrequently preceded by and no doubt brought on by unusual physical effort or activity on the part of the patient; and it has been observed, too, that the subsidence of the pain has been about coincident with the discharge of a considerable quantity of urine voided at one time. This would naturally result in an intermittent hydronephrosis were for the time being relieved of the obstruction to its ureter, which changed mechanical conditions in some cases make possible.

The operative fixation of the kidney sometimes cures the patient. In other instances, however, hydro-ureter may already have developed from obstruction quite low down in the course of the ureter, or rather fixed angulation of the ureter may have taken place at two or more points, separated by considerable distance in its course, while the kidney itself may not show any marked deviation from the normal. It is to be regretted that occasionally under some such circumstances the ureteral conditions may be such as not to admit of the plastic operative correction of that tube, so that the kidney, apparently about normal in appearance, may rarely have to be removed to relieve the patient's suffering.

These lesions upon which modern diagnostic and technical methods have done so much to clear up, enter into competition with gallstones and other conditions to which the upper abdomen is liable. In all doubtful cases, where careful inquiry suggests peculiar facts with pain in the loin, or with disturbances of urinary function or voiding, the possibility of renal or ureteral involvement should be considered. Here cystoscopy, ureteral catheterization, and pyelography may well be resorted to before operation has been done.

The writer has, in a former article,[1] emphasized the importance in these cases of observation upon each kidney by the phthalein method to determine, before operation is decided upon, exactly what the functional predicament of each kidney is.

Since August 15, 1913, a time up to which the former record was made, and in the period of time that has elapsed between that date and July 29, 1914, there have been twenty-one operations upon the kidney with one death.[2] In the résumé of cases therein tabulated the nephrolithotomies (of which there were two in the latter series) were included under the heading of nephrotomy. Both patients recovered. The only fatality in the recent enumeration followed a nephrectomy in an adjoining state. Had we had the usual opportunity of studying the condition of the patient here in the Mount Carmel hospital, the result might have been different.

"In the interval between January 1, 1907, and August 15, 1913, there were in the practice of Drs. W. D. and C. S. Hamilton, operations upon the kidney on sixty-seven occasions with seven deaths."

Original Series.	Latter Series.	Total.
FOR SUSPENSION OR FIXATION	OF KIDNEY.	
7 cases	3 cases	10 cases
6 recovered	3 recovered	9 recovered
1 death	0 death	1 death
	NEPHROTOMY.	
28 cases	5 cases	33 cases
24 recovered.	5 recovered	29 recovered
4 deaths	0 death	4 deaths
	NEPHRECTOMY.	
32 cases	13 cases	45 cases
30 recovered	12 recovered	42 recovered.
2 deaths	1 death[2]	3 deaths

Total cases 88; total deaths 8.

LIGHT IN THE INDUSTRIES.

BY EDWARD JACKSON, M.D.,
Denver, Colo.

(Read at the thirty-ninth annual meeting of the American Academy of Medicine, Atlantic City, N. J., June 20, 1914.)

To speak of the "menace to health" from light in the industries" suggests the schoolboy's statement that "salt is what spoils the bread, when the cook leaves it out." Light hurts the eyes when they do not get enough of it. Any one who has attempted photography knows the enormous difference between indoor and outdoor exposures. The film or plate that gives a good negative in one twenty-fifth of a second outdoors, requires one or several seconds indoors by good daylight, and as many minutes by artificial illumination. The actinic effect of good outdoor light is many times, or many hundreds of times, as great as that of ordinary indoor illumination.

Outdoor industries present no problems as to illumination, except when carried over into the hours of natural darkness. The farmer, the sailor, the man digging in the ditch make no complaint of the light in which they work. If outdoor light is complained of it is by the indoor worker, who suffers not from excessive light but from excessive contrast. The adaptive power of the eye, by which light varying thousands of times in photometric power is yet serviceable for vision, can be impaired by habitually deficient illumination, or strained by excessively great or sudden demands upon it.

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[1] "Pyonephrosis in Presumptive Single Kidney; Operation: Recovery," *The Ohio Medical Journal*, September, 1913.

[2] In this case nephrectomy was done in a greatly enfeebled woman in whom it was shown that she had a tubercular kidney complicated with stone high in the ureter.

Contrasts become a source of inconvenience or actual pain. These we always associate with the active processes of light adaptation, feeling the bright light to be excessive. The glaring street lights, so unpleasant at night, would scarcely be noticed, much less cause discomfort, if turned on at mid-day. Many of us have noticed how different from their glare at night is the soft effect produced when they are turned on in the twilight. To go from a dark interior into full noon-day sunlight is always unpleasant. But the gradual transitions of the night and day out doors are noticed only with pleasure. Excessive contrast, either simultaneous or successive, is responsible for nearly all the fear of bright light.

Bright light falling not on the thing looked at, but directly on the eye from near the direction it is looking, causes contraction of the pupil, lessens the light received from the object we are endeavoring to see; and thus actually makes it more difficult to see, besides causing the discomfort of contrast. Looking directly at the sun without protective glasses, or at an accidental brilliant electric flash may injure the retina. But these scarcely figure in the industries, where the danger is practically always from deficiency not from excess of light.

As to the quality of the light, as regards its color or wave length, we are now in an era of investigation and experiment. Of the results thus far arrived at it is only needful to say that they seem to agree entirely with what would be expected on the evolutionary hypothesis; that the mixture we know as white light, the ordinary daylight, is the light to which the eye is best adapted; and that the center of the solar spectrum, the yellowish green, is the most efficient portion. The relative harmfulness of infra-red and ultra-violet rays still remains debatable. Daylight is best. The shifting of the hours of labor to secure it in a greater proportion of the working day is a real hygienic measure that has recently been put into effect in some of our cities. If daylight is not obtainable, then the closest possible imitation of it is the ideal to be aimed at.

Steadiness of illumination is extremely important. Superior steadiness is a great advance that incandescent mantels and filaments have made over flames, and arc lights. Adaptation is the power that enormously extends the usefulness of our eyes, and it is brought into play with every change in the illumination to which they are exposed. To the dark-adapted eye bright light is dazzling and unpleasant. To the light-adapted eye feeble illumination is insufficient and baffling. The rapid variation of the brilliancy of light catches the eye always adapted to the other sort of illumination, and therefore at a disadvantage.

One other quality of illumination must be noticed: Is the light diffuse or concentrated? Does the needed light come from a large area, or from a single point? The more concentrated it is, the more brilliant that small area must be, to furnish enough light; and the stronger will be the contrast with surrounding darkness, and the more unpleasant and harmful, if the source of light is placed where it can send rays directly into the eye. Even if the eye is effectively shielded from the source of light, sharpness of contrast is generally to be avoided. Here is where indirect lighting systems show superiority. For reading, writing, and many other kinds of work, diffuse illumination is best. But it is not best for all. In sewing, with thread having the same color as the material on which it is used, or in reading from the fine graduation of a metal or glass scale, sufficient contrast may only be obtainable in a light that gives sharp shadows. In respect to concentration or diffusion, the light must be adapted to the particular work that is to be done by it.

The direction in which the light falls upon the work is of very great importance. Generally it should come from above and behind the worker. The relations of the eyes, hands, and working position of the body are such that our work is mostly in front of us, below the level of the eyes. Light coming from above and behind falls fully on the side of the object we look at, on the part to which the worker's attention is directed.

If it come from squarely behind, the shadow of the head or body will be thrown on the work. But it may come over one shoulder, either shoulder except for writing and work of that sort. If it came from over the right shoulder when writing in the ordinary manner, the shadow of the hand would be thrown about the point of the pen. Therefore the common rule is to have it come from over the left shoulder. But in general the light must come from above. For fine work, that from time to time the worker must bend down to see, from above is the only direction that light can come to be of any service. It is light coming from above, from which the eye is best protected by brow and lashes against the harm from dazling by light shining directly into the eye.

Fortunately in providing for artificial illumination this requirement of having it come from above is generally met. Sometimes it is not so far above the worker as to save the eyes from direct rays; but the benefit of shading the eyes from the source of light is coming to be understood, the inverted gas mantel is so well worked out, the electric lamp is so easily suspended from above, the ceiling offers such a convenient and natural means of indirect illumination, that with artificial illumination this matter of the direction in which the light should fall upon the work is likely to be well taken care of.

But for the supply of daylight no such rational provision has been made. Our dwellings and our workshops, in the way they are lighted, still bear marks of similarity to the primitive huts or the caves; in which our ancestors may have stored their possessions, or taken refuge from storm or cold and enemies by night, but in which they never planned to spend their days and do exacting eye-work. The light coming in horizontally from a distant window, or falling on the floor, and thence diffused upon the ceiling, before it can be reflected on the work is much more suggestive of the light coming in from the mouth of a cave, than of any scientific arrangement for efficient illumination. In the building of to-day there is still too much of the castle, planned chiefly for defence; or the monastery designed to favor introspection rather than observation.

While the illuminating engineers, seeking to introduce new systems securely covered by patents, have enormously improved the means at command for artificial lighting; no such service has been rendered with regard to plans for utilizing the best, cheapest and most general source of light, ordinary daylight. Almost the only attempts to have daylight fall in the right direction on work, have been by skylight, available for only a single story, or by utilizing a single favorable position close to a north window. For the south side of a building, where the greatest amount of light is available, the practical suggestion has been to exclude light by shades or to wall it up solidly, to save the eyes from the unpleasant contrast of the strongly lighted floor.

Bad as has been our architecture as regards the indoor use of daylight, it has been supplemented by the daily practice with regard to the exclusion from our buildings of such light as might get in through the openings left to look out of. Shades are hung so as to cut off the light from the upper part, the only part of the window valuable for indoor illumination. "Blinds" are made to give alternate streaks of light and darkness emphasizing the annoyance of contrasts. And in work-shops dust is generally allowed to accumulate on glass windows, until their capacity to admit light is cut down to one half or one tenth of what it might be. When all this occurs inside, little thought will be given to what is outside the window, whether it be clear sky, a dark wall, or a tree.

There is danger in the industries from the tendency to make inadequate provision for daylight; and then to depend on artificial illumination. Artificial illumination is mitigated darkness. Properly planned it may serve in a way the purposes of ocular labor; but it serves but poorly the more general purposes of life. Life can exist in darkness; but poorly and on a lowered plane. Aside from their rudimentary eyes cave-dwelling species are generally of less perfect organization than the nearly related species that dwell on the surface of the earth.

The connection of pigmentation with general nutritive processes is a deep and essential one running back to primitive forms of life. Sensitiveness to light is one of the general properties of living matter. Light must be placed with temperature and oxygen as an essential condition of any high organic development. Buried in our language are the results of countless experiences of the race; a "bright prospect," a "sunny disposition," "radiant with joy," are phrases that with their opposites, a "dark outlook," "black despair," a "clouded life," illustrate the general need for light, the depressing effect of clouds and darkness. "Bad weather," a "perfect day" each carries its implication as to light, and they have definite meanings to all of us. We may have blunted our pleasure, diminished our capacity for enjoyment of out-door living; but none of us has reversed the race estimate of light and shadow.

It is worth while to consider how far the worker has been deprived, by habitual indoor living with deficient daylight, of the benefits of the general influence of light on nutrition, and its value in cheerfulness, hope, courage, and quickened intellectual processes. Certainly the seriousness of the waste must be noted with the newer demands for efficiency. This consideration alone is sufficient reason for totally revising our provisions for daylight indoors; aside from the more definite and better understood demands for such revision that arise from accidents from machinery poorly illuminated, or the injury to the eye, and the strain on its related parts of the nervous system caused by working by inferior light.

The menace to health as regards light in the industries is the utter disregard of the essential principles of illumination by daylight, and the tendency to substitute for daylight artificial light which enables the work to be done; but leaves the worker the worse for it, deprived of the general benefits of natural illumination essential to a high standard of permanent health.

The stimulated and excessive growth of land values in cities, causing the erection of high buildings; without any attempt to control their effect on daylight illumination, by building restrictions, requiring correspondingly wide spaces between them; and the perfecting of artificial lighting for technical use, without any attention to a scientific system of introducing daylight into our buildings, raises a real danger to health that ought to be considered and dealt with.

The most important step now to be taken is the abundant lighting with daylight of the upper part of our rooms, from which direction its benefits can be enjoyed without annoyance to our oversensitized indoor eyes. At the same time a high regard for health would compel us to take as many of our industries as possible into the conditions of outdoor light and open air.

This is scarcely the occasion to discuss particular industries, and conditions. But the harm of deficient illumination shown most strikingly in the diseased eyes and pale faces of mine workers, or the victims of sweat-shops, is a menace only less in degree to all whose lives are spent indoors, removed from the influence of normal daylight.

THE BOYLAN LAW AND THE DOCTOR.

It is not necessary to reiterate the provisions of Chapter 363 of the Laws of New York, popularly known as the Boylan Law, and relating to the use of narcotic drugs; the State Department of Health supplies each applicant for the order blanks prescribed by the law with a full copy from which its text may be studied at leisure. But one hears now and again bitter denunciation of this act from physicians who seem to feel that the law was aimed at the profession directly and constitutes one step in a campaign of aggression on the part of the health department. While the *Journal* holds no brief for the State Department of Health, it believes that this attitude is erroneous and that it betokens a failure on the part of some physicians to realize the position into which the medical profession has been forced, partly because of its own folly and shortsightedness, partly because of the cupidity of well-organized bands of quasi professional adventurers, and partly as the result of that movement of public unrest which has heaved to the surface so many new prophets untried doctrinaires, each with his panacea for every ill, political, financial and moral. This spirit is as much the natural outgrowth of changing social conditions as was the upheaval in France in 1783. One need not attempt an essay upon this subject except to recognize it as the potent factor in the life of this country to-day and to ascribe to it the desire for better things that, wisely directed, will in time bring about permanent good. Just now inexperience, lack of direction and impatience characterize its leaders, and as a result the Boylan Law with many other half-digested, incomplete and incongruous pieces of legislation have hatched out ducklings rather than fighting cocks.

It is safe to assume that the revelations of the extent to which the abuse of narcotics has penetrated came to the bulk of the medical profession with as startling unexpectedness as it did to the general public. Every physician has knowledge of a few isolated cases of drug habit, but it is probable that the combined knowledge of all reputable practitioners would fall far short of the actual extent to which drugs, particularly cocain, are used as intoxicants; for it is extremely doubtful whether the bulk of drug users among the lower strata of society come under medical observation to any extent until the accident of an arrest or physical collapse reveals their condition. The police department of the larger cities and the agents of the Internal Revenue Department have been aware of this condition much longer than the medical profession. It is quite natural that the public, amazed by the extent of the traffic in drugs and horrified to find the inroads that it has made among school children, should have leaped to the conclusion that the medical profession, whom it supposed controlled the distribution of narcotics through their prescriptions, had failed to properly safeguard their supposed privilege. It has been so common for victims of morphin to claim that they first acquired their taste for the drug from their physician, that it was an easy and a natural step to postulate that all drug users had started in the same way. It is also a regrettable fact that among those convicted of wholesale traffic in narcotics were a few physicians. Given the fact of widespread drug abuse, plus a desire to control it at once, and the reason for the Boylan Law is evident.

How much are physicians to blame for present conditions? This is a question of great delicacy. It may confidently be stated that the physicians who have willfully abused their control of habit-forming drugs are few indeed, but the loosely knit organization, careless business way and proneness to concentrate on the strictly professional side, common to most physicians, must be held accountable for a degree of laxness which has resulted in leaving the retail druggist too much responsibility, especially in refilling prescriptions by telephone and dispensing on their own initiative; because of this laxness it has grown progressively easier for anyone to obtain almost any drugs in almost any quantity. If, as a class, we have been careless and if through that carelessness we have relaxed from our duty in keeping up the barriers against the indiscriminate use of powerful medicines, what right have we to complain if the public, aroused to a sudden realization of the awful extent to which the drug-forming habit has grown, erects defenses for itself which in a measure curtail our convenience? As a matter of fact the restrictions of Boylan Law are not oppressive; any physician may obtain the supply of drugs that he needs, may still prescribe according to his judgment and if he systematizes his work a little the effort of recording his prescriptions need not be burdensome.

The weakness of the bill lies in the exceptions made in favor of proprietaries. This is distinctly vicious, for it bestows on a non-professional class the privilege of compounding and distributing narcotic compounds with no restriction beyond the use of the needful blanks in obtaining their supply. The gross content is supposed to be stated on the label and the goods are presumed to be sold "in good faith." The motive behind this vicious paragraph will bear close scrutiny.

It does not require any deeper analysis of the question to perceive that it is not the action of the Department of Health, but the demand of an irritated public that lies back of the present law. The commercial clauses bear the hall mark of the drug jobbers' lobby. The lesson is obvious; it behooves us as physicians to study ourselves carefully that we may be, as we should be hereafter, pioneers in the effort to better the public health. To this end a better organization in state, county and local medical societies is essential. Let each physician regard it as his duty to give a certain amount of his time to the study of his relation to the body politic. Let him inform himself on questions of public health and if unable himself to give time and energy to the legislative side of the question, at least let him heartily coöperate in holding up the hands of those who may be better able to act as leaders in unifying the profession throughout the country into an effective weapon for the public good.—Editorial, *Long Island Medical Journal*, October, 1914.

PROPRIETARIES.

The medical public has undoubtedly received an imitation typewritten circular letter from a so-called pharmacal company offering samples of its products and endeavoring to explain why those products should be taken up and recommended by the medical profession. The reasonableness of their logic is shown in two sentences, stating that the general public is making a great mistake by taking laxatives without medical advice, and that constipation is, therefore, rapidly becoming a national disease, but that their particular preparation is an exception to this general rule and should be more widely employed. As this particular preparation has been before the general public for some time and was first brought to their attention through catchy street car advertising, it seems a little late to ask the medical profession to adopt it, especially as no statement of the contents or dosage is made to enable physicians to judge for themselves of the character and efficiency of the preparation recommended. If there were nothing else to condemn this particular pharmacal, the ungrammatical and contradictory circular should raise a suspicion that the compound that it recommends might be equally crude.

Why should physicians recommend proprietaries? Why should they without a *quid pro quo* aid in furthering a private enterprise at the expense of their patients and themselves? Why should they recommend to their patients or use themselves a compound of the contents of which they are ignorant? This is but one example of an evil which has grown to such proportions that one has but to observe the shelves of any average pharmacy to be impressed with the number and variety of proprietaries that the druggist is forced to keep in stock. From his standpoint this is a hardship, inasmuch as his legitimate profit on the ordinary proprietaries is too small to make it worth while to carry them unless he buys in quantity. There are few proprietaries that can not be made up from the National Formulary equally well, with larger profit to the pharmacist and less cost to the patient. There are few proprietaries that can not be bought at marked down rates in department stores and elsewhere to the detriment of pharmacist and doctor alike; yes, and patient too. There are few proprietaries that do not on their labels and in the circulars which accompany them exaggerate the results which may be expected from their use.

From every viewpoint the proprietary habit is disadvantageous to physician and patient alike. The extent to which the proprietary business has grown may be readily gauged by the opposition shown to every endeavor to put through rational public health laws. The recently enacted Boylan Law, while it curbs the physician, exempts the patent medicine vender. The Pure Food Law has been bitterly assailed and is constantly under attack by a paid propaganda, and efforts to establish a National Department of Health have brought out into the open as well organized a lobby as ever acted at the National Capitol and for all of these things physicians are largely to blame. The fable of the man who warmed an adder by the fire and the other who permitted a camel to put his head into the tent are recommended for the consolation of physicians who use proprietaries.—Editorial, *Long Island Medical Journal.*

WAR'S MONEY COST MEANS EARLY PEACE.

The great event of last week was the flotation of the huge English loan of $1,125,000,000. Just think of it! Nearly three times the cost of the Panama Canal! And yet, according to the statements of high officials of the English Government, this will pay the expenses of the war on the present footing for less than a year.

When one considers that England to-day has only a few hundred thousand in the field and has not yet sent to the continent any of the 1,000,000 recruits which she is now drilling, it can be seen that this great loan will serve only a short time at best. But this is not all. English statesmen are telling their people that just as soon as the 1,000,000 raw recruits go to the continent an additional million must be drilled to take their places. What does this mean? If to support a navy and a few hundred thousand men costs from $4,500,000 to $5,000,000 per day, it does not take a statistician to figure what it will cost to support a navy, a great transport system and nearly 2,000,000 men.

As readers know, I am not a pacifist, nor do I preach disarmament, but I am sure that in the present conflict the rulers of all these nations have absolutely lost their heads. The great rate war here in the United States a generation ago, which wrecked most of our railroads and brought on the terrible panic of 1893-7, was the merest child's play compared to what has already taken place in Europe, from a financial and industrial point of view, yet, according to their own statements, they have not yet got under way.

Let me give just one illustration of what I have in mind. Last week I met the publisher of a well-known machinery journal who has just completed his round among certain mills of the East.

To my great surprise, he told me that he had actual knowledge of $80,000,000 worth of Russian contracts that have just been placed in this country for shrapnel. By using a few statistics relative to these orders, I find that each shell will cost about $20 landed in Russia and that they are discharged per gun at the rate of six a minute, or, say, 1000 per three hours. If a battery of 24 guns was at work, this would mean a cost of about $500,000 just for the shells in a three-hours' engagement! When we first hear of such an $80,000,000 contract, we think that it should keep the Russian army supplied with shrapnel for the rest of the war. When we take pencil and paper to figure the cost, we find that the $80,000,000 can be used up in a very short time. With two sections of the army engaged in a three-hour battle twice a day, this $80,000,000 would last only 40 days.

I care not how much the statesmen of the various nations talk about a long war, I can say authoritatively that the bankers of these nations know that the war can not be long. During the last week I have not only talked with a well-known English banker, but last Friday morning had breakfast with a director of one of the great banks of Berlin who has just arrived in this country. Although he is sure that Germany will not be defeated, and declares that American readers are being grossly misled as to the causes and conduct of the war, yet he insisted that it must be short. In fact, as I interviewed bankers of all nationalities in New York the last week, I found them agreed that the attempt of either side to fight this war to a finish means financial bankruptcy for Europe. It is all very well to talk about the unlimited supply of available men; how England can draw upon her colonies and even Japan; while the Germans have countless numbers of Mohammedans in reserve; but neither the Japs nor the Turks can fight without huge sums of money. Why, for England merely to transport a small army of Japanese to Europe and maintain them for 60 days would cost nearly a billion dollars. So I say that the rulers of Europe have actually gone crazy. No one of them dreamed of such a war.—Roger W. Babson, *Philadelphia Public Ledger*, Nov. 23.

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Athens, December, 1914.

POSTGRADUATE MEDICAL EDUCATION.

The time is opportune for reorganizing and correlating the advantages offered in the way of postgraduate medical education in this country, in order that the best results may be secured. In the development of an effective and harmonious system of graduate training, we must rely in the main on the same means and methods as have obtained in bringing about a more satisfactory condition of undergraduate medical education. The provisions for postgraduate instruction in Germany, as set forth in a letter which appeared in the *Journal of the American Medical Association* under date of November 28, may not be practicable in all its details in the United States, since the movement in the former country receives government aid, but the educational opportunities for the graduate could and should be facilitated by an increased number of fully equipped schools, as a first step.

Among specialized departments for postgraduate training, mention should be made of the one organized at Harvard University about two years since. It is hoped that the movement may spread to other established universities which are ideal institutions to offer courses for graduates in medicine. Opportunities for postgraduate work should also form a part of the university announcements of summer attractions. Such development would comport with institutional efforts in other directions to make education partly recreational. It is to be hoped that the Council on Medical Education of the American Medical Association, which is ever loyal to high professional ideals, will consider the question seriously, and formulate the future standards to be adopted; or, in other words, promote certain reforms, and stimulate interest in a greater proportion of the medical profession relative to the needs, aims and objects of postgraduate training.

Pennsylvania can boast of the "Polyclinic" of Philadelphia (an excellent school) and there are other special courses to be had and still others being organized (*e. g.,* that on Neurology at the Philadelphia Hospital) but far better opportunities for work would be available to the busy practitioner if all of these were correlated and systematized into a single schedule or a university system. Such a roster should include all of the existing schools, and should permit of as little confliction of hours in individual subjects as possible. The student should be privileged to pursue his work under the teachers connected with different institutions, and at the end of the course receive a certificate signed by all of his instructors without being obliged to matriculate in more than one school. Such an organization could be easily effected and controlled by a central bureau or office properly manned at a minimum expenditure of money and time. Moreover, a similar central bureau in the leading medical centers of different states might easily, as the result of concerted action, lead to the formation of a national bureau of postgraduate medical education.

This plan would enable physicians to obtain practical training, and keep them abreast with the rapid progress of medicine without disproportionate pains, and also to acquire it in a less desultory or fragmentary manner than under existing conditions. Courses of proper duration and uniform standards could be readily established, so that a diploma or certificate would be something of which the recipient might feel justly proud. In view of the European war, the present is a propitious season to take up the question of postgraduate education in this country, since opportunities for study abroad will probably be practically closed to American students for several years to come. To the writer it would seem fitting that Pennsylvania, the birthplace of medical education in America, should lead in this matter, and serve as an object lesson to other states of the union.

My object in calling attention to the subject is simply to promote connected, coöperative effort on the part of existing postgraduate schools and special courses, with the double purpose of enlarging the facilities for graduate instruction, and of making it more attractive and accessible to those in search thereof than has been the case hitherto. In conclusion, while postgraduate educational conditions in America are not altogether satisfactory, any change contemplated should aim to secure as far as possible unity of method and standards, and so conduce to unity of medical thought and practice. J. M. A.

THE SIGNIFICANCE OF HIGH ARTERIAL PRESSURE.

On page 193, Dr. Riesman calls our attention to a very pertinent question in connection with blood pressure taking, What is its exact value? Blood pressure measurement has a wide range of usefulness and is one of the most important advances in recent medical science. High pressure does not always indicate serious foreboding. Dr. Riesman does a service in reminding us not to get excited over the single symptom of high pressure, for it is only when it is considered in connection with the other clinical symptoms or pathological findings that it should serve as a basis for prognosis. The laity is becoming very generally informed and often misinformed upon the subject of blood pressure, and our careless use of the term "high blood pressure" may often create a false alarm and an unjust one. There is a wide range to normal pressure and we must study the whole picture before arriving at a conclusion. McA.

NARCOTICS AND NARCOTIC LEGISLATION.

Members are requested carefully to read the article on "The Boylan Law and the Doctor" reproduced on a previous page. Various bills aimed at the restriction of the indiscriminate sale of habit-forming drugs will surely be introduced at Harrisburg this winter and it will be well for the people as well as the doctors themselves if the profession take an intelligent and earnest interest in this matter. Organized efforts will be made to prevent the passage of laws really needed for the protection of society, and efforts will be made so to shape any bills that may become law that commercial interests will be favored and, unless the profession in this state be both watchful and wise, their rightful and proper liberties will be curtailed by any legislation that may be enacted. As physicians we should be willing to be subjected to any reasonable restrictions and ready to take an active part in shaping restrictive legislation and in influencing public opinion. The editorial in the *Long Island Medical Journal*, above referred to, closes as follows:—

> The commercial clauses bear the hall mark of the drug jobbers' lobby. The lesson is obvious; it behooves us as physicians to study ourselves carefully that we may be, as we should be hereafter, pioneers in the effort to better the public health. To this end a better organization in state, county and local medical societies is essential. Let each physician regard it as his duty to give a certain amount of his time to the study of his relation to the body politic. Let him inform himself on questions of public health and if unable himself to give time and energy to the legislative side of the question, at least let him heartily coöperate in holding up the hands of those who may be better able to act as leaders in unifying the profession throughout the country into an effective weapon for the public good.

S.

DO PATENT MEDICINES CONTROL THE PRESS?

Dr. Samuel Hopkins Adams in the *Journal of the American Medical Association* for December 5, page 2062, gives an example that appears to answer the above question in the affirmative. Mr. Adams writes:—

> Binghamton, N. Y., is the home of Swamp Root, a conspicuous "booze-medicine" which I exposed a few years ago in *Collier's Weekly*. It is a prosperous and thriving city of almost 55,000 inhabitants, served by two local newspapers, the *Press* and the *Republican-Herald*. Just before the appearance of "The Clarion," the publishers sent to the *Press* an advertisement of the book specially designed to arouse the local interest of a city largely devoted to the patent medicine industry. The copy was returned with the following letter:

> Binghamton, N. Y., Sept. 30, 1914.
> Houghton Mifflin Company,
> 4 Park St., Boston, Mass.
>
> Gentlemen:—We are returning, herewith, your order of the 28th inst., for "The Clarion" with copy, as we do not care to handle same. Thanking you for the proposition, we are
> Very truly yours,
> The Binghamton Press.

> On the theory that this particular form of wording had been deemed too pointed, one of the regular advertisements of the book was sent. This also was refused, with the following suggestive intimation:—

> Binghamton, N. Y., Oct. 9, 1914.
> Houghton Mifflin Company,
> 4 Park St., Boston, Mass.
>
> Gentlemen:—We are returning, herewith, your copy of the 7th inst., for "The Clarion." We greatly prefer not to handle any advertising for this particular book. Thanking you for the offer, we are
> Very truly yours,
> The Binghamton Press.

The *Republican-Herald* declined the advertisement because "owing to a peculiar agreement existing between the Binghamton newspapers" they felt compelled to decline all advertising of this particular book!

While writing of the "peculiar" influence exerted by the patent medicine business attention is called to pages 2058 to 2061 of the *Journal of the A. M. A.*, for December 5, where will be found part of the story of how the chief owner of that fraudulent nostrum, Cardui, has more influence in his local church and conference than did his pastor, the Rev. C. H. Myers, who stated in a letter published in the Chattanooga *Times*:—

> We have lost locally in our fight for a high principle, but the whole church will yet know and believe that such a bureaucratic system of church government can not long exist as a power for righteousness. We are standing against a gigantic ecclesiastical machine, fed by an unlimited amount of money. Mammon has won.

It remains to be seen whether Mr. J. A. Patten shall stifle the good influence of the great Methodist Episcopal Church or whether in the language of another of her fearless ministers, Rev. G. T. Byrd, pastor of the First Methodist Church of Etowah, Tenn., that denomination shall remember that it "is not dependent for its life and growth on the use of tainted money—money which comes from a product which government analysis shows to be twenty per cent. alcohol." S.

OFFICIAL APPOINTMENTS.

Since the list of committees was published in the October issue, pages 80 and 81, Dr. Samuel C. Smith, Hollidaysburg, has been appointed a member of the Committee on Health and Public Instruction, to fill the vacancy caused by the resignation of Dr. Albert M. Eaton, Philadelphia.

Dr. Wilmer Krusen, Philadelphia, chairman of the Committee on Public Policy and Legislation, has been appointed a delegate from the Medical Society of the State of Pennsylvania to the Midwinter Conference on Legislation, Medical Education and Public Health, Congress Hotel, Chicago, February 15 and 16, 1915.

The Commission on Cancer and the Commission on Venereal Diseases, each with the same personnel as last year, have been continued as subsidiary to the Committee on Health and Public Instruction.

The Commission on Conservation of Vision, the Commission on Medical Expert Testimony, the Committee on Defense of Medical Research and the Committee on Promotion of Efficient Laws on Insanity, each with the same personnel as last year, have been continued as subsidiary to the Committee on Public Policy and Legislation, Dr. Wendell Reber becoming the chairman of the Commission on Conservation of Vision by request of the former chairman. By order of President Heckel.

C. L. STEVENS, Secretary.

SOME REPETITIONS FOR GENERAL INFORMATION.

The per capita assessment levied at Philadelphia in 1913 was for the period September 1, 1913, to August 31, 1914, and being levied and also due in 1913 is generally spoken of as the assessment for 1913.

The per capita assessment levied at Pittsburgh under the new constitution is for the period September 1, 1914, to January 1, 1916, and as this period covers all of 1915 it should naturally be called the assessment for 1915.

It will be seen therefore that there was really no 1914 assessment, and in fact county societies do not pay the state society anything for new members reported during the fourteen months from August 31, 1913, to November 1, 1914, though such members have been entitled to all the rights and privileges of the state society during this time. Reinstated members come into the state society the same as new members. A member suspended from his county society for nonpayment of his 1914 annual dues brings in no revenue to the state society for the year even when he pays up his dues and becomes reinstated in both the county and state societies.

The new constitution says that "the per capita assessment for new members elected and reported during November and December shall cover the assessment for the following calendar year." The state secretary therefore asks that the per capita assessment of $2.75 accompany the name of each new member and each reinstatement reported during these two months, but it is the assessment for 1915 and not an assessment for 1914.

The roll of membership of the state society is now practically made up new each year since the constitution says that "the membership of this society shall consist of the active members of the component county societies who have paid their annual dues for the current calendar year." The transition period, during which the society changes from the regulations of the former constitution to the regulations under the new constitution, will present no serious complications if the above statements are kept in mind. After the local societies have had opportunity legally to make necessary changes in their constitutions and the present plan has been working for a few months there should be fewer complications arising than under the old plan. Several county societies have already adopted the Model Constitution and the majority of the societies are taking steps to do so.

THE PER CAPITA ASSESSMENT; IS IT TOO MUCH?

For a number of years the county societies have paid to the state society an annual *per capita* assessment of $2.00. At Pittsburgh the fiscal year was changed so as to correspond with the calendar year, and an assessment of $2.75 was made for the sixteen months, September 1, 1914, to January 1, 1916. Fifty cents of this is set aside for the Medical Defense Fund and ten cents for the Medical Benevolence Fund, leaving $2.15, not quite thirteen and one half cents per month, for the JOURNAL, salaries, expense of committees, annual meetings, postage, stationery and incidental expenses.

The Medical Society of the State of Pennsylvania certainly does as much for its members as any state medical society, and no society can show a more careful and economical management of its finances. A comparison of the dues of both large and small state societies contiguous to Pennsylvania substantiates this statement. The annual dues for New York, New Jersey and West Virginia are $3.00. The annual dues of the Homeopathic Medical Society of the State of Pennsylvania are also $3.00 and this society has neither a medical defense fund nor a medical benevolence fund. S.

A GOOD BEGINNING.

The Somerset County Medical Society with a membership of thirty-eight had thirteen members present at its meeting November 17, and each of the thirteen members paid his annual dues of four dollars for the year 1915. Nothing the matter with that "thirteen"! What society will do as well or better in December? S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the November Journal was printed:—

Allegheny County: *New Members*—Benjamin R. Almquest, Abraham Finkelpearl, Pittsburgh; Ralph E. Case, McKeesport; Edwin Blair Henry, Ingomar; Adelbert E. Torrens, West View (by transfer from Beaver County Society). *Deaths*—John Ernest Gould (Western Pennsylvania Med. Coll., Pittsburgh, '95) in Pittsburgh, October 28, aged 44; John C. Griffin, in McKees Rocks, recently. *Transfer*—Joseph W. Anderson to Philadelphia County Society. *Resignations*—George M. Kelly, Martin E. Kohn, Karl H. VanNorman. *Removal*—Charles Homer Bair from Chicago to 121 East Lemon St., Lancaster (Lancaster Co.).

Beaver County: *Transfer*—Adelbert E. Torrens to Allegheny County Society.

Bedford County: *Transfer*—Clair B. Kirk to Clinton County Society.

Berks County: *New Member*—George S. Deibert, Athol (by transfer from Lehigh County Society).

Bucks County: *New Member*—Neri B. Williams, Perkasie.

Clinton County: *New Members*—Clair B. Kirk, Mill Hall (by transfer from Bedford County Society); William G. Moorehouse, Renovo (by transfer from Mifflin County Society).

Delaware County: *Removal*—John J. Donahoo from Shamokin (Northumberland Co.) to Frackville (Schuylkill Co.).

Fayette County: *New Member*—John F. Detweiler, Uniontown.

Franklin County: *New Members*—David M. Shoemaker, Waynesboro; Leon J. Tunitzky, Mont Alto. *Death*—Henry X. Bonbrake (Bellevue Hospital Med. Coll., New York, '65) of Chambersburg, in Markleton, November 22, from chronic nephritis and atheromatous condition of the arterial system, aged 71.

Jefferson County: *New Member*—Joseph Madison Lukehart, Rossiter (Indiana Co.). *Death*—Frank N. Yeager (Univ. of Pennsylvania, '88) of Hamilton, in Rochester, Minn., following an operation for carcinoma, aged 57.

Lackawanna County: *Removal*—Frederick P. Hollister from Scranton to 2827 North Broad St., Philadelphia.

Lancaster County: *New Member*—Cyrus W. Truxal, Lancaster. *No Longer a Member*—Herbert R. Bowers.

Lehigh County: *New Members*—Aaron D. Weaver, Old Zionsville; Frank R. Wentz, Allentown. *Transfer*—George S. Deibert to Berks County Society.

Lycoming County: *New Member*—Franklin J. Norris, South Williamsport.

Mercer County: *Removal*—Samuel A. Woods from Sharon to Farrell.

Mifflin County: *Transfer*—William G. Moorehouse to Clinton County Society.

Montgomery County: *No Longer a Member*—Angeline M. Lemon (transferred to the Cleveland Academy of Medicine of Ohio).

Northampton County: *Death*—Samuel Stem Apple (Jefferson Med. Coll., '69) in Easton, November 11, from senile debility, aged 75.

Perry County: *Death*—James F. Thompson (Jefferson Med. Coll., '64) in Liverpool, November 26, aged 70.

Philadelphia County: *New Members*—Joseph W. Anderson (by transfer from Allegheny County Society), Gustavus C. Bird, Lyndon H. Landon, James G. McCollin, Jr., John R. Minehart, B. Franklin Morgan, Cyril Patrick O'Boyle, Lydia Marian O'Harrow, Herbert Old, Barton Kathcart Thomas, Philadelphia; Frederick C. Turnbull, Los Angeles, Cal. *Deaths*—Sherborne W. Dougherty (Univ. of Pennsylvania, '94) in Philadelphia, November 22, aged 45; Walter C. Stillwell (Univ. of Pennsylvania, '73) in Philadelphia, November 14, from cerebral hemorrhage, aged 63. *Resignations*—Edward Z. Holt, Francis B. Jacobs. *Removals*—Maxwell Herman from San Carlos, Ariz., to Philadelphia; Howard K. Longshore from Glenside (Montgomery Co.) to Philadelphia; Walter S. Lucas from Wynnewood (Montgomery Co.) to Philadelphia; Morris B. Oberholtzer from Philadelphia to Boyertown (Berks Co.).

Snyder County: *New Member*—R. W. Johnson, Selins Grove.

Sullivan County: *New Member*—Theodore Wright, Dushore.

Venango County: *New Member* Frank E. Magee, Oil City.

Warren County: *Removal*—Anna S. H. Flatt from St. Helena, Cal., to Corydon.

Present membership 6603. S.

PAYMENT OF PER CAPITA ASSESSMENT.

The per capita assessment for the period from September 1, 1914, to January 1, 1916, has been received from component county societies as follows:—

Oct. 31,	Northumberland	1-2	1-2	$ 5.50
	Allegheny	1-36	3-38	99.00
	Bradford	1-3	39-41	8.25
Nov. 5,	Dauphin	1-12	42-53	33.00
	Northumberland	3-10	54-61	22.00
Nov. 6,	Mifflin	1-9	62-70	24.75
Nov. 9,	Bucks	1-12	71-82	33.00
Nov. 10,	Dauphin	13	83	2.75
Nov. 11,	Clearfield	1	84	2.75
	Mifflin	10-11	85-86	5.50
	Lehigh	1-5	87-91	13.75
Nov. 13,	Bucks	13-27	92-105	38.50
Nov. 14,	Allegheny	37-39	106-108	8.25
	Washington	1-36	109-144	100.00
Nov. 16,	Mifflin	12	145	2.75
	McKean	1-5	146-150	13.75
Nov. 18,	Mifflin	13	151	2.75
Nov. 19,	Clearfield	2-15	151-165	38.50
Nov. 20,	Lehigh	6	166	2.75
Nov. 21,	Somerset	1-13	167-179	35.75
Nov. 24,	Fayette	1-30	180-209	82.50
Nov. 25,	McKean	6-8	210-212	8.25
	Franklin	1-2	213-214	5.50
	Allegheny	40-41	215-216	5.50
Nov. 27,	Venango	1	217	2.75
	Elk	1-7	218-224	21.75
Nov. 30,	Lehigh	7-8	225-226	5.50
Dec. 2,	Mifflin	14	227	2.75
	Philadelphia	1-21	228-248	57.75
	Mifflin	15	249	2.75
Dec. 3,	Dauphin	14-19	250-255	16.50
	Northumberland	11-20	256-265	27.50
	Lancaster	1-21	266-286	57.75
	Westmoreland	1-21	287-307	57.75
	Elk	8-9	308-309	4.00
Dec. 4,	Lancaster	22	310	2.75
Dec. 5,	Jefferson	1	311	2.75
	Elk	10-11	312-313	4.50
Dec. 7,	Bucks	28-38	314-324	30.25
Dec. 8,	Snyder	1	325	2.75
	Westmoreland	22-24	326-328	8.25
	Allegheny	42-46	329-333	12.75
	Bradford	4-10	334-340	19.25
Dec. 9,	Mifflin	16-17	341-342	5.50
Dec. 10,	Lehigh	9-11	343-345	8.25
	Columbia	1-4	346-349	11.00
Dec. 12,	Columbia	5-12	350-357	22.00
	Erie	1-8	358-365	22.00
Dec. 16,	Beaver	1-6	366-371	16.50

C. L. Stevens, Secretary.

STATE NEWS ITEMS.

MARRIED.

Dr. Robert L. Schaeffer and Miss Millie L. Ochs, both of Allentown, November 30.

Dr. Emil J. Goldring and Miss Della Meitner, both of Philadelphia, November 3.

Dr. Harry Kusmin, Farrell, and Miss Sadie Sedwitz, in Pittsburgh, November 10.

Dr. Walter J. Lowrie, Braddock, and Miss Anna Lilley, in Philadelphia, November 18.

Dr. Mary Mumford and Mr. C. Theodore Campbell, both of Meadville, in Fairfield, October 2.

DIED.

Dr. Joseph L. Campbell (Univ. of Pittsburgh, Med. Dept., '89) in Chicora, November 8.

Dr. Charles Henry Reed (Univ. of Pennsylvania, '78) in Philadelphia, November 22, aged 62.

Dr. James Thompson Wilson (Univ. of Pennsylvania, '64) in Tyrone, September 23, aged 74.

Dr. Henry C. Miller (Homeopathic Med. Coll. of Missouri, St. Louis, '71) in Wilkinsburg, November 2, aged 80.

Dr. Charles Buchanan Martin (Univ. of Pennsylvania, '87) in Quarryville, October 26, from nephritis, aged 53.

Dr. Frederick C. Seitz (Jefferson Med. Coll., '86) in Philadelphia, November 25, following an attack of apoplexy, aged 63.

ITEMS.

Dr. Charles A. Steim, Kittanning, is in New York City doing postgraduate work.

Smallpox. Twenty-seven cases of smallpox have been reported at Jamestown, Mercer County.

The Bureau of Medical Education and Licensure began its fall examinations in Philadelphia and Pittsburgh, December 2.

The Hospital of the University of Pennsylvania receives $10,000 under the will of the late Emma L., widow of Dr. Morton H. Forrest.

Dr. John L. Atlee, Lancaster, was elected a fellow of the American College of Surgeons at its meeting in Washington, D. C., last month.

Dr. J. B. Carnett has been appointed surgeon at the Philadelphia Hospital to fill the vacancy caused by the retirement of Dr. Edward Martin.

The Warren Emergency Hospital has received a gift of $10,000 from J. P. Jefferson, for the building of a maternity hospital, a memorial to the donor's wife recently killed by a passenger train.

Dr. John E. B. Buckenham, having passed the city civil service examination, has been appointed superintendent of the Philadelphia Hospital for Contagious Diseases, to succeed Dr. William H. Walsh, resigned.

Staff Officers. The staff of St. Mary's Hospital, Philadelphia, at its annual meeting, at the Union League, November 18, elected the following officers: President, John J. Moylan; vice president, Louis F. Love; secretary, Joseph H. Ross.

Dr. Joseph C. Steedle, McKees Rocks, a member of the Allegheny County Medical Society, who has already served two terms in the House of Representatives, is favorably mentioned for the chairmanship of the Committee on Public Health and Sanitation.

Sanatorium Wing for Children. The State Health Department has decided to devote the new west wing of the Cresson State Sanatorium entirely to children. The new ward which cost about $300,000 will have small wards, each containing eighteen beds, private rooms, play rooms, etc. The new wing will be ready for occupancy early in the spring.

The American Association for the Advancement of Science will hold its sixty-sixth meeting in Philadelphia, December 28 to January 2. Dr. L. O. Howard, Smithsonian Institution, Washington,

D. C., is the permanent secretary. Dr. M. J. Babb, College Hall, University of Pennsylvania, is chairman of the local committee on hotels and boarding houses.

Curtin Medical Scholarship. An effort is being made by the Philadelphia Alumni Society of the Medical School of the University of Pennsylvania to complete the fund for the purpose of endowing a scholarship in the medical school of the university in the name of the first president of the society, Dr. Roland G. Curtin. Subscriptions to the fund should be sent to Dr. L. H. Adler, Jr., 1610 Arch Street, Philadelphia.

Physician Legislators. The following physicians are members of the House of Representatives: James R. Cormley (Miami Med. Coll., Cincinnati, '93) Monaca, Beaver County; W. Mitchell Hamilton (Univ. of Pennsylvania, '07) Pittsburgh; William A. Ostrander (Jefferson Med. Coll., '99) Smethport, McKean County; James W. Sampsell (Jefferson Med. Coll., '78) Penns Creek, Snyder County; Joseph G. Steedle (Univ. of Pittsburgh, '02) McKees Rocks; Isaac K. Urich (Jefferson Med. Coll., '82) Annville, Lebanon County. The following physicians are members of the Senate: Edwin M. Herbst (Jefferson Med. Coll., '78) Oley, Berks County: Daniel P. Gerberich (Hahnemann Med. Coll., '81) Lebanon; William P. Lynch (Medico-Chirurgical Coll., '01) Clarks Summit, Lackawanna County; S. J. Miller (New York Univ., '86) Madera, Clearfield County.

Clinic Day at Erie. The first annual meeting of the Northwestern Pennsylvania Chapter of the Jefferson Medical College Alumni Association, was held at Erie, Pennsylvania, November 14, 1914. The invitations included all regular physicians of Northwestern Pennsylvania, and the entire day and evening was devoted to scientific and social meetings. Surgical clinics were held at St. Vincent's Hospital from 10 A.M. to 1 P.M. by Drs. J. Coles Brick and E. E. Montgomery. Dr. Montgomery operated upon several gynecological cases, including as the most interesting, a hysterectomy for carcinoma, a perineorrhaphy, and a number of suspension operations by his own method of shortening the round ligaments. Dr. Brick, in addition to several operations in proctology, demonstrated modern methods of rectal examinations. Luncheon was served at Hamot Hospital at 1 P.M. From 2 to 5 P.M. medical and dermatological clinics were conducted by Drs. Thomas McCrae and H. K. Gaskill, respectively. Much material was presented at each of these clinics, and many most interesting cases were discussed by those in charge. At 5 P.M. a business meeting of the Chapter was held and a permanent organization effected. The officers elected for the ensuing year were as follows: President, Dr. John W. Wright; vice president, Dr. Frank A. Walsh; secretary, Dr. Harrison A. Dunn; treasurer, Dr. C. Weston Page; chairman of Advisory Committee, Dr. G. Wm. Schlindwein. Two members of the Advisory Committee were elected from each of the counties represented, the membership consisting of all eligible Jefferson Medical College graduates resident in the counties of Crawford, Erie, Forest, McKean, Mercer, Venango and Warren. The roster at present contains the names of eighty physicians. At 8 P.M. a banquet was held at the Erie Club with Drs. Montgomery, McCrae, Brick and Gaskill as guests of honor. The attendance was most satisfactory, more than one hundred physicians being present at the clinics, with seventy representative local and visiting physicians at the banquet.

GENERAL NEWS ITEMS.

The Critic and Guide has purchased the *Dietetic and Hygienic Gazette*, and the combined journals will be under the editorship of Dr. William J. Robinson.

A Jail Sentence for Selling Adulterated Milk. Repeatedly prosecuted by the Department of Health for violation of its milk regulations, and in spite of this continuing his illegal practices, a Brooklyn dealer was sentenced in the Court of Special Sessions, on November 12, to pay a fine of $250 for selling milk improperly labeled and to serve three months in the city prison for selling adulterated milk.

The Friedmann Treatment for Tuberculosis. In 1913 the Public Health Service appointed a board to investigate the Friedmann Treatment for Tuberculosis and the report was published November 6, 1914. The report may be summarized as follows: The claim of Dr. F. F. Friedmann to have originated a specific cure for tuberculosis is not substantiated, and his claim that the inoculation of persons and animals with his organism is without harmful possibilities is disproved.

Coagulen. A preparation which, it is said, will stop almost instantly the flow of blood from a wound has been invented by Professor Theodor Kocher of Berlin, who was awarded the Nobel prize for surgery in 1912, and his assistant, Dr. A. Fonce. The preparation is called coagulen. It is a powder and is dissolved in water before being applied. The discoverers have made a gift of their invention to the armies in the field and have sent large quantities to both the Germans and French.

Good Health in the Army. In the annual report of Surgeon-General William C. Gorgas it is announced that the hospital rate for the year was the lowest on record, that typhoid fever has been virtually stamped out, that there has been less alcoholism than at any time in the history of the army and that, in spite of the large number of men on duty in the tropics, the malarial fever rate is the lowest since 1898. Surgeon-General Gorgas especially commended the high hygienic standards maintained in camps.

Wood Alcohol. Fourteen persons were recently killed and a number of others blinded by drinking whiskey adulterated with wood alcohol purchased from a Vermont druggist. Three Armenian rug weavers in New York City died recently from drinking wood alcohol, and two more were permanently blinded. The wood alcohol is so highly rectified that it can not easily be distinguished from grain alcohol and is sold under various misleading names, one of which is Colonial spirits, which is easily confused with Cologne spirits.

The National Health Guard is the name of an association having for its object the promotion of public and individual health and to stimulate public interest in every wisely designed movement to prevent life waste and upbuild national vitality. Those who enlist in this organization give the following pledge: "I will, in so far as my circumstances and opportunities will permit, make an earnest effort: (1) To inform myself upon the subject of personal, community, and household hygiene, and to myself obey the laws of health. (2) To encourage the practice of individuals having periodic health examinations to upbuild physical efficiency and to detect disease in time to check or cure it. (3)

To give support and encouragement, and to urge my friends to do the same, to the public health service and officials who are laboring to protect the most precious asset of the nation. (4) To encourage schools, churches, social and civic bodies and employers to give as a patriotic duty all consistent help in stimulating public interest in and in spreading knowledge of the rapidly advancing science of health and life conservation. (5) To coöperate with and advise the Life Extension Institute in its purpose to reduce life waste and to guard and strengthen the vitality and vigor of our race."

Council on Pharmacy and Chemistry. During November the following articles have been accepted for inclusion in New and Nonofficial Remedies: Cupric applicators, cupric applicators special, caustic applicators special, stypstick applicators special (accepted for the appendix to N.N.R.), Antiseptic Supply Company; Pasteur antirabic vaccine, Laboratory of W. T. McDougall; solution pituitary extract, H. K. Mulford Company; radium bromide, radium chloride, radium sulphate, Radium Company of America; radium carbonate, Standard Chemical Company. In view of the unsatisfactory evidence for the therapeutic value of articles proposed for inclusion with New and Nonofficial Remedies, the Council adopted the following statement: "Claims are often made, however, which are incompatible with common experience and sometimes defy the laws of Nature. Claims which seem highly improbable will not be admitted by the Council unless the manufacturer supports them by evidence acceptable to the Council. In doubtful cases the Council acts on these questions under the advice, and with the coöperation, of its staff of clinical consultants."

In view of information received from the Antiseptic Supply Company the Council has modified the description of cupricsticks to indicate that these are tipped with a mixture of copper sulphate, alum and potassium nitrate, containing 20-25 per cent. of copper sulphate.

Armour and Company have informed the Council that its pituitary liquid is adjusted to uniform strength by the method of G. B. Roth (*Jour. of Pharm. and Exper. Thera.*, July, 1914). The description of pituitary liquid, Armour, has been revised to indicate this.

BULLETIN EXCERPTS.

Bulletin, Blair.

With a View of eliciting this information for the benefit of our own physicians and for the purpose of helping put Blair County on the state medical map, the editor of the *Bulletin* hereby requests the services of the following physicians, who will give us a write-up of the institutions to which they are assigned: Altoona Hospital, Dr. G. D. Bliss; Nason Hospital, Dr. W. A. Nason; Mercy Hospital, Dr. J. U. Blose; County Hospital, Dr. H. J. Sommer. We want to know when the institution was founded, the number of beds, number of cases treated annually in hospital and dispensary, kind of cases received and excluded, requirements for admission, equipment of the institution, number of physicians on the staff, visiting days, usual rates for ward and private cases, amount of state aid received, etc., etc. Don't stop when you've answered these questions, write more. The statements can be made into a very readable article, and our "Hospital Number" be made a credit to the county and the local profession.

Bulletin, Crawford.

There Is Very Little in this world worth having, which does not cost something in time, effort or money to obtain. Any member who expects all the benefits of the medical society, as the state Journal, medical defense instruction from the scientific program, the good-fellowship of the social and fraternal relations and other things included in membership, condensed into one sugar-coated, compressed tablet which they can swallow at their leisure without making any effort to support the society, is bound to be disappointed.

Bulletin, Erie.

It Was Well Worth any physician's time and effort to come to Erie to attend the clinics conducted by the professor of Jefferson Medical College, and we feel that the Erie County Medical Society owes to them and to the members of the Alumni Association its sincerest thanks for this highly successful affair. If it has done nothing more than to point out to the members of the society what they can accomplish within their own organization, especially if each member gives his enthusiastic support, then the clinic day has amply served its purpose. And now that we have been shown how to do it, what is to prevent the Erie County Medical Society from conducting a clinic every three months? The place of holding these clinics, and whether they should be conducted by the society or by the members of the hospital staffs, are details that can easily be worked out. However, due notice should be given to a properly appointed committee or officer, in order to facilitate systematic arrangements of the cases. It was clearly demonstrated too, that the cases which were presented before the clinics could have been worked up much more thoroughly, and in the clinics suggested above, it would be an advantage to have each case presented by the physician in charge. After this has been done to take up a further discussion by the members present. If a final decision can not be reached, and the cases are such that they can be held over, they could be made available for an annual clinic to be conducted by eminent men from other cities, in this way establishing a sort of clearing house for rare and obscure cases. The question, it seems to us, is not as to whether it should be done, but merely as to the best way of going about it. Think it over, make note of your ideas, present them at our annual meeting and after we have elected the new officers, take part in the discussion that may come up.

REVIEWS.

DISEASES OF THE EYE. By George E. deSchweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania. Seventh edition, thoroughly revised. Octavo of 979 pages, 360 text illustrations, and seven lithographic plates. Philadelphia and London: W. B. Saunders Company. Cloth, $5.00 net, half morocco $6.00 net.

Diseases of the Eye takes its rank amongst the foremost books on this subject. It is most thorough in every detail and reflects the wide experience, originality and authority which its author possesses. Dr. deSchweinitz needs no introduction and his book is one that all physicians would do well to be familiar with. N. S. W.

THE PHYSICIAN'S VISITING LIST FOR 1915. P. Blakiston's Son and Company, 1012 Walnut St., Philadelphia. For 25 patients, $1.25; 50 patients, $1.50; 50 or 75 patients, 2 volumes, $2.25; 100 patients, $2.50; perpetual edition, 1300 names, $1.25; 2600 names, $1.50.

The table of contents of this little publication which is in its sixty-fourth year will recommend it to those wishing a list and is as follows: Calendar for 1915-1916, complete table for calculating the period of utero-gestation, table of signs, incompatibility, poisoning, Metric or French decimal system of weights and measures, table for converting apothecaries' weights and measures into grams, dose table, quarantine periods in infectious diseases, asphyxia and apnea, comparison of thermometers, blank leaves for visiting list, memoranda, addresses of patients, of nurses, accounts asked for, wants, obstetric engagements, vaccination engagements, records of births, deaths, cash account, etc. B.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume III., Number V. Octavo of 190 pages, 61 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published Bimonthly. Price per year, paper, $8.00; cloth, $12.00.

The present volume continues the now well-known and valuable contributions from Dr. Murphy's Clinic. The subjects treated are: Clinical talks on surgical and general diagnosis, traumatic epilepsy, epithelioma of glans penis, carcinoma of the corona penis, fecal fistula, old inversion fracture of the ankle, inversion fracture of the ankle, old inversion fracture of the left ankle, old Pott's fracture, removal of nail from the right tibia and os calcis, a recent report from an old case of knee arthroplasty, arthroplasty of the knee, arthroplasty of the elbow, hypertrophy of the middle lobe of the prostate, imperforate anus, the use of radium and the *x*-rays in the treatment of cancer. J. M. W.

A MEDICAL DICTIONARY FOR NURSES, Giving the Definition, Pronunciation, and Derivation of Terms Used in Medicine, together with Supplementary Tables of Weights, Measures, Chemical Symbols, etc., Arranged with Special Reference to Use by Nurses. By Amy E. Pope, Graduate of the School of Nursing of the Presbyterian Hospital; Special Diploma in Education from Teacher's College, Columbia University, New York; Formerly Instructor in the School of Nursing, Presbyterian Hospital; Instructor in School of Nursing, St. Luke's Hospital, San Francisco, Calif. Pages 288. New York: G. P. Putnam's Sons. Price $1.00.

This book contains a dictionary of terms; a list of abbreviations frequently used in writing prescriptions; chemical symbols that are frequently used to represent common compounds; a table of the elements; poisons; a table of some of the more common poisons; some frequently used prefixes and suffixes; comparison of Centigrade and Fahrenheit thermometric scales; method of converting one scale into another; tables of weights and measures; comparative values of apothecaries' and metric fluid measures, of standard and metric linear measures, of apothecaries' and metric weights, of avoirdupois and metric weights; approximate value of domestic measures; measuring solutions; average composition of common American food products. The definitions appear to be clear and accurate. B.

A MANUAL OF DISEASES OF THE NOSE, THROAT, AND EAR. By E. B. Gleason, M.D., Professor of Otology in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. 12mo of 590 pages, 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $2.50 net.

The task to which the author has set himself is to write for students and general practitioners a manual which "can not be too concise provided that the subject is efficiently covered, and descriptions lose nothing in clearness by brevity." We feel that the author has succeeded in his aim in a marked degree. The diseases of the nose, throat and ear are treated in a way which can not but make this volume very valuable to the general practitioner. It is certainly ample for a medical student. One of the most valuable portions of the book is a list of formulas which should cover everything ordinarily needed in these specialties. The formulas are made especially useful by notes describing the indications and methods of application of each. Perhaps the best indication of the decided value of this book is the fact that it has had five reprints and revisions since its first appearance in 1907. J. M. W.

LOCAL AND REGIONAL ANESTHESIA, including Analgesia. By Carroll W. Allen, M.D., of Tulane University, New Orleans, with an introduction by Rudolph Matas, M.D., of Tulane University, New Orleans. Octavo of 625 pages with 255 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half morocco, $7.50 net.

This volume in so far as we know is the only comprehensive American treatise on local anesthesia and should find a decided place. It is distinctly a publication from Matas' Clinic at Tulane University, New Orleans. Indeed Matas had planned to be a co-author but later had to surrender the work to his associate.

It appears that from fifty-five to sixty per cent. of all major operations in Matas' Clinic are done under local anesthesia. Even if we may not admit the advantage of local anesthesia in such a large number of cases we must still be impressed with the mere fact that it is found satisfactory in such a well-known clinic. It is undoubtedly true that operations under local anesthesia are gradually increasing in number but still there are many large hospitals where it is confined practically to very minor work. In such hospitals it can not be doubted that a large number of patients during the year fail to receive just exactly the best that is to be offered in their particular cases.

Allen's book should go a long way toward supplying us with the proper amount of enthusiasm and the technical skill in the use of local anesthetics through which we may more exactly meet varying requirements by varying methods. Allen discusses in detail the action of all the local anesthetics of which there are now some seventeen. He considers novocain hydrochlorid the most satisfactory one. It is generally improved by combining it with adrenalin.

Important chapters deal with general principles of technic, instruments, anoci-association, the use for morphin, scopolamin, and the influences of local anesthetics in preventing shock. Detailed descriptions are then given of the methods of applying local anesthesia in practically every operation. The local anesthesia is admitted to be "not the method for routine work within the abdomen." The directions for its use, however, are given for those cases where it may prove the safest method that we have. The question of spinal anesthesia is also thoroughly discussed. It is not, however, advocated except in special cases.

We consider that this volume is a most important one and that it will have a real effect on American surgery. J. M. W.

ABDOMINAL OPERATIONS. By Sir Berkeley Moynihan, M.S. (London) F.R.C.S., Leeds, England. Third edition, entirely reset and enlarged. Two octavo volumes totalling 980 pages, with 371 illustrations, 5 in colors. Philadelphia and London: W. B. Saunders Company. Cloth, $10.00 net: half morocco, $13.00 net.

We predict a very warm welcome for the third edition of Moynihan's Abdominal Operations, especially as eight years have elapsed since the last edition. The present edition is practically entirely rewritten, containing over 150 more pages and 85 new illustrations. Two new chapters have been added on the excision of gastric ulcer and complete gastrectomy. Among general considerations it is interesting to note that Moynihan prefers iodin catgut. He does not, however, use the present widespread method of sterilizing the patient's skin by iodin. He finds "no preparation will sterilize the skin so effectually as Harrington's solution." The present reviewer is particularly pleased to see that Moynihan completely accepts the principles of anociassociation.

Moynihan's previous edition is so well known in this country that it is, perhaps, unnecessary to speak further of the clearness with which the general principles of abdominal surgery and the special technic of the individual operations are described. The work is confessedly not a general treatise but is based solely on Moynihan's own personal work. Full recognition, however, is given to the contributions to abdominal surgery by other authors including many Americans such as Andrews, Cushing, Crile, Murphy, Clarke, Bevan, Blake, the staff of the Mayo Clinic, and last but not least our own W. W. Keen, who is described as "one of the most distinguished of living surgeons."

The present edition is presented in two convenient sized volumes of unusually good paper and large clear print.

It is especially pleasing to remember that since the last edition a Baronetcy has been bestowed on Moynihan and it is now Sir Berkeley that we have to thank for this most important and practically new contribution to surgical literature.

J. M. W.

PROPAGANDA FOR REFORM.

Vaccine Virus Not Contaminated. A study of cases shows that vaccinal tetanus is not due to contaminated vaccine virus. Further, since the law regulating the sale of biologic products in 1902 went into effect, there have been examined in the Hygienic Laboratory of the U. S. Public Health Service over 1,500,000 doses of vaccine virus without a single specimen having been found to contain tetanus spores. Also, experiments indicate that tetanus will not be produced even if the virus used contains tetanus spores. Most cases of vaccinal tetanus are due to infection after vaccination (*Jour. A. M. A.*, Sept. 19, 1914, p. 1032).

Sodium versus Potassium Salts. The probable shortage of potassium salts due to the war suggests that sodium salts may in most cases be substituted without disadvantage. In general potassium salts have no marked superiority over the corresponding sodium salts. While the potassium compounds are said to be more active and to possess a more diuretic effect, the sodium salts are less depressing to the heart and in some instances less disagreeable to the taste. Sodium iodid, sodium bromid, sodium acetate, sodium citrate, etc., are just as effective as the corresponding potassium salts (*Jour. A. M. A.*, Sept. 19, 1914, p. 1034).

Sanatogen. Testimonials for Sanatogen are published which show good results in cerebral concussion, alcoholic gastritis, anemia, etc. The patient is given a chance to recover by rest, a proper diet and sanatogen—and the recovery is attributed to sanatogen. Based on some biologic experiments the exploiters of sanatogen assert that "sanatogen acts as a strong stimulus as far as the recuperative powers of the blood are concerned." These experiments were repeated by Professor A. J. Carlson of the University of Chicago, using sanatogen, casein, casein and glycerophosphates, milk and crackers and milk. Prof. Carlson's experiments show that the effects produced by sanatogen are not different from those obtained when casein, casein and glycerophosphates, milk and crackers and milk are used (*Jour. A. M. A.*, Sept. 26, 1914, p. 1127).

Value of Talcum Powders. The action of talcum powders on the skin depends on their protective and dehydrating properties. On the other hand they tend to form crusts and pastes, due to mixture of the powder with sweat or other secretions. There is doubt if the boric acid in talcum powders can exert any antiseptic action. The action of the salicylated talcum powder of the National Formulary, though containing 10 per cent. of boric acid, depends on its salicylic acid. Commercial talcum powders contain small amounts of various antiseptics and perfuming agents and have little value from a therapeutic point of view (*Jour. A. M. A.*, Sept. 26, 1914, p. 1129).

Liquid Soap. The following economical formula has been proposed. It may be flavored and colored to suit: Sodium hydroxid 55 gm., potassium hydroxid 65 gm., cottonseed oil 800 c.c., alcohol 500 c.c. and water to make 5000 c.c. (*Jour. A. M. A.*, Sept. 26, 1914, p. 1129).

Significance of the Word "Lutein." The word "lutein" has long been applied in physiologic chemistry to designate a group of fat-coloring matters which occur in nature and which have more recently also been given the general designation of lipochromes. As a rule the use of the term has been restricted to the yellow coloring-matter which develops in the ovarian structures. It is unfortunate that lately various preparations of desiccated corpora lutea from animals are being sold as lutein (*Jour. A. M. A.*, Sept. 26, 1914, p. 1119).

Serobacterins. While objection may be made to the sensitized living bacteria used by Besredka because there is always an uncertainty as to the action of living bacteria in the animal body, such danger can not be attributed to the "serobacterins" because they contain dead bacteria and, so far as known, can do no more harm than other dead bacteria—in fact it is claimed that they are preferable to other vaccines because the toxic products of the bacteria, other than the immunizing properties, have been largely removed. It must be said, however, that these preparations are still in the experimental stage. In great part, careful clinical observations will decide that the serobacterins are really superior to ordinary vaccines (*Jour. A. M. A.*, Oct. 3, 1914, p. 1223).

Lactic Acid Ferments. There is a large amount of literature to the effect that the *Bacillus bulgaricus* hinders putrefaction in the intestinal canal. While there may be some question as to a greater success in securing the implantation of this bacillus by administering it in "liquid cultures" the report of the Council on Pharmacy and Chemistry shows that such a culture is likely to reach the consumer in a more active state than one in the form of tablets (*Jour. A. M. A.*, Oct. 3, 1914, p. 1223).

Agar-Agar-Biscuits. To make agar-agar biscuits it is only necessary to add finely powdered agar-agar to the flour used in making the biscuit. The amount should be, if possible, sufficient so that a dose of five grams will be contained in each biscuit (*Jour. A. M. A.*, Oct. 3, 1914, p. 1224).

Action of Sodium Cacodylate. Containing its arsenic in organic combination and in the pentavalent state, which becomes therapeutically active only as it is reduced to the trivalent inorganic state, sodium cacodylate is so slightly toxic that therapeutic doses do not give rise to toxic symptoms. There is nothing in the literature to show that sodium cacodylate has a special action on the eye, and blindness from its administration need not be feared (*Jour. A. M. A.*, Oct. 3, 1914, p. 1223).

Glycothymoline Refused Recognition. A report of the Council on Pharmacy and Chemistry cites glycothymoline as a typical illustration of a "patent medicine" advertised to the public through the doctor. Different formulas have been ascribed to glycothymoline by its promoters from time to time —but whatever the exact composition of this secret nostrum may be, it has been definitely shown that it is but a weak antiseptic solution. Nevertheless, the advertising circulars recommend the use of glycothymoline in such serious conditions as diphtheria and ophthalmia of the newborn. Glycothymoline is in conflict with Rules 1 and 4 of the Council on Pharmacy and Chemistry, because of its indefinite composition and the method of advertising it to the public. It is in conflict with Rules 10, 6 and 8, in that it is an unscientific, shot-gun mixture sold under unwarranted therapeutic claims and under a misleading name (*Jour. A. M. A.*, Oct. 10, 1914, p. 1313).

Glycothymoline not Harmless. Glycothymoline is a mild antiseptic practically devoid of germicidal power and when used as a simple mouth wash is practically harmless. However, the recommendations to the public for its use in serious diseases make it a menace to the public health—and physicians are responsible for its widespread use (*Jour. A. M. A.*, Oct. 10, 1914, p. 1304).

Declared Misbranded. The Federal authorities have secured convictions under the Food and Drugs Act against the following "patent" medicines: Nurito, West Baden Sprudel Water, Radam's Microbe Killer, Dr. Hilton's Specific No. 3, Dr. Sullivan's Sure Solvent, Russell's White Drops. With the exception of the first two the products were declared misbranded chiefly because false and fraudulent therapeutic claims were made for them. Nurito was declared misbranded because false statements in regard to the ingredients were made and West Baden Sprudel Water because it was not a natural water as claimed (*Jour. A. M. A.*, Oct. 17, 1914, p. 1408 and 1409).

Papine (Battle and Co.). This is a simple aqueous alcoholic solution of morphin, one grain to each ounce. It is exploited under the utterly unwarranted claim that it does not nauseate, constipate nor create a habit (*Jour. A. M. A.*, Oct. 17, 1914, p. 1411).

SOCIETIES.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

(Continued from November.)

A Case of Hypophysis Disease. Dr. J. Milton Griscom and Dr. E. H. Goodman reported the following case of hypophysis disease: The patient, Francis W., white, aged ten years, had applied to the Eye Dispensary of the Pennsylvania Hospital, under the service of Dr. James Thorington, on December 7, 1912. He complained of poor vision with headaches, extending over a priod of several years, with some aggravation of these symptoms during the past few months. Vision, at the time of this first visit, equaled O. D., 20/40; and O. S., 20/40. With S. plus 0.75, O. D. equaled 20/20; and with S. plus 1.00, O. S. equaled 20/20. Externally, the eyes were negative; and the eyegrounds showed no pathologic changes, aside from a congested retina and some overfullness of the vessels. The visual fields showed a marked concentric contraction for both form and color. In order that the case might be studied more thoroughly, the patient was admitted to the medical ward, and the following history obtained: Francis W., born February 22, 1902, admitted April 23, 1914. The patient has always been sick. Has had typhoid fever, chickenpox, pneumonia, scarlet fever, measles, whooping cough, nervous prostration (one year old) and nerve exhaustion. Never had any injury to head.

Was a tall baby when born, but was not fat. Weight, nine pounds. Began to walk when two years old (late), but his mother had to carry him until he was nine. Was always sick; and when he became sick, had to be carried, as he then lost all power in his limbs. Mother seems to think he was bright as a baby (eight months old).

Patient went to school at eight years. Could not go before, as he was always sick. Schooling was continually interrupted by illness. Has been going to school irregularly for a year. Is in Grade 3 B. Should be in sixth grade at twelve years. Can read and spell O. K. Can not write well. No good at mathematics. Does not play with other children. Is always tired. Has no energy. No appetite lately, but ordinarily has a voracious appetite. Is melancholy at times, on account of mother scolding him. Is disagreeable to sister. Father scolds him because he is not bright. Is much bigger than boys of his own age. Stronger than most boys (doubtful). Has headaches all the time, in forehead and in both eyes. Sleeps poorly; but at times, sleeps all the time.

Father is said to be bright. Is a patrol driver, and weights 250 pounds. All patient's family are big.

Patient is a large boy, adipose type; ears, prominent; head, large; eyes throughout, negative. Measurements are all increased for a boy of his age. Penis, rudimentary; left testicle down in scrotum. Weight, 118½ pounds. Average weight, 81.6 pounds for that age. A boy of 15½ years weighs 118½. Height, 4 feet, 11¾ inches. Average height for age, 1426 mm. He is 1520 mm. There is increased tolerance for levulose, 200 grams being assimilated without producing levulosuria. No polyuria. The case was diagnosed as one of hypopituitarism.

Dr. William Zentmayer, in discussing papers of Drs. Weisenburg and Griscom and Goodman, said that all were very much indebted to Dr. Weisenburg for his lucid explanation of this peculiar symptom complex, and that there were some points in the symptomatology that he would like to speak of. One was that while the typical field defect is bitemporal hemianopsia, this is not always found. Homonymous hemianopsia is not rare in pituitary disease. Another eye-symptom is the presence of a central scotoma.

Regarding the effect of the tumor on the nerve paths and the checking of conduction, Dr. Zentmayer said that he had had under observation for nineteen years a woman with bitemporal hemianopsia. For twelve years, she had shown no change in her vision. At first, she had had hemianopsia for color only. She had then developed it for form. Subsequently, she ran on for twelve years with no change whatever. There was no atrophy; but there was always present a slight blurring of the nasal border of the disc and overfullness of the veins.

Fifteen years after he had first seen her, a change came over her fields. The field began to increase toward the temporal side. Eighteen years after the first symptom had developed, she suddenly gained almost a full field. Of course, it was a contracted field; but it had an extent of fifteen or twenty degrees on the nasal side, as well as on the temporal. She died soon after this, and no opportunity was afforded to make a postmortem examination. She had very pronounced acromegalic symptoms.

With regard to the other symptoms, Dr. Zentmayer said that he had seen a case in which the acromegaly was very incipient. The fields showed some contraction of the upper and outer part. The man was forty-five years old. Dr. Zentmayer had known him when he was younger, and he was then very handsome. When seen after an interval of ten or twelve years, Dr. Zentmayer found quite a change in his face. The patient himself had not noticed it, and neither had his wife, they having become gradually accustomed to the change. There was also a little grayness of the optic nerve. The patient likewise had a symptom that could not be explained as a direct symptom of the disease—a weakness of accommodation. An *x*-ray picture was taken, without the radiographer's having any idea that the existence of a tumor was suspected. The man was radiographed for the purpose of detecting sinus trouble; but the report was that if a tumor of the pituitary was suspected to exist, this was probably the correct diagnosis. The case showed very clearly what Dr. Weisenburg had pointed out about the fields.

Regarding tumors of the uncinate, Dr. Zentmayer said that he had then under observation a man, fifty-eight years of age, with no ocular changes whatever, yet with marked uncinate symptoms. He would lose consciousness while sitting at the table; and, after two or three minutes, would wake up again. His family could notice that he did not know anything that was going on during the interval of unconsciousness. The man has a large business, which he attends to regularly and well, except when he gets these lapses of consciousness. At such times, however, he will transact a piece of business, forgetting afterwards that he has done so. He has peculiar lip movements, and he has also taken on a peculiar levity.

Dr. William C. Posey said that one of the first cases of this kind that he had had an opportunity to study in private practice was in a lady who had lost the sight of her left eye because of pressure on the optic chiasm, and had temporal hemianopsia in the right eye. Her most marked symptom was a diminution in the light sense, due to involvement of the macular fibers in the right optic nerve, a symptom to which Dr. Weisenburg had called attention.

Dr. Posey thought that the most interesting thing in this connection that had come out within the last year was concerning the treatment of this affection. The questions to be asked were, "What are you going to advise?" and "Is it safe to recommend an operation when the vision is still good, or not?" Dr. Weisenburg had said that the prognosis for the restoration of vision is good, even though it be very low, provided that there is not a great deal of optic atrophy. Dr. Posey agreed with this view, but considered it difficult to say how much atrophy there is in retrobulbar cases. He cited the case of a young medical man in this city, who was absolutely blind in one eye for a year or more, yet was operated on by Dr. Cushing and had restoration of vision in the blind eye. Dr. Posey had been rather chary about recommending an operation, either by Cushing's, or by Frazier's method; because of the risk of failure, and because of the danger to the life of the patient.

Cilia in Anterior Chamber. Dr. Dewey reported a case in a patient from Dr. Zentmayer's clinic, eight years old, who had come to the hospital on the 25th of the preceding March, giving a history of having had a hair blow into his left eye while he was getting his hair cut, four years before, and stating that the hair was still there. The vision was 6/6 in the right eye, and 6/9 in the left. There was a small cicatrix on the cornea of the latter eye, with a cilium fixed in it at one end, and apparently going right behind the iris, and between the iris and the lens, up and out. The distal end projected diagonally across the anterior chamber.

The boy had complained of considerable pain for four days prior to reporting at the clinic. There was, besides the slight cicatrix on the cornea, a very slight opacity of the lens; but this was rather hard to detect. There was no sign of irritation, and the eye was white and quiet.

Dr. Dewey referred to Collins and Mayo, who state that giant cells, similar to those found in tubercles are apt to form around cilia emplanted in the eye, and that they are probably derived from the endothelium of the blood and lymph vessels and have a phagocytic function.

These authors also state that if the root-sheath of the hair is carried into the eye with it, the cells composing the root-sheath proliferate and form a funnel-like epithelial tumor or cystic growth, lined with laminated epithelium. When the growth is cystic, the entire anterior chamber may become completely lined with epithelium, obstructing the exits of intraocular fluids and producing a glaucoma.

There was no cystic growth here, and no formation of any kind around the hair; but the boy was positive of the pain in the eye. There was no difference in the refraction, and no reason why one eye should have a lower amount of vision than the other, except the slight opacity on the lens. Dr. Dewey thought that probably Mayo's explanation of the formation of an epithelial lining might apply to this case, because there was a wound of the cornea, and it might have proliferated through the wound. He believed that the boy had a slight attack of glaucoma.

Dr. Ziegler was sorry that the patient of Dr. Dewey was not present, because such conditions are rare. He recalled that during his residentship at Wills Hospital, there had been three patients of the kind, whose cases are reported by Dr. Harlan in the first volume of the report. The first patient was an Italian, who had been baling hay or straw, and had been struck on the brow by the end of a piece of wire. While there was no wound of the brow or lid, there had been a puncture of the cornea; and four cilia were found in the anterior chamber. Two of them protruded through a fistulous opening in the cornea. Cataract occurred, and the man came to the clinic one morning on account of a peculiarly severe pain every time he shut his eyes. Dr. Ziegler extracted the two cilia that projected through the fistulous opening in the cornea, and then turned the patient over to Dr. Harlan in the afternoon. A few days later, a case of the same sort occurred in the service of Dr. Oliver; and then, one in Dr. Risley's service.

In the first case, an iridectomy was done within a few months, the lens debris being removed, together with the two remaining cilia. There were no signs of proliferation about the hair bulbs. They had been there for a number of months, and there was a chance for proliferation to have taken place; but none had occurred.

The case that occurred in Dr. Oliver's clinic was in a farmer, who also was baling hay and was struck by the end of a wire. In Dr. Risley's case the accident had occurred in a blacksmith's shop, where a hot nail had struck the patient's eye.

Dr. Zentmayer said that the interest of Dr. Dewey's case would lie in seeing the patient. A mistake in the diagnosis would be almost excusable, because of the resemblance of the condition to retained pupillary membrane. It was only by watching the contraction of the iris and the synchronous movement of the free end of the hair that the diagnosis could be made. In the absence of a history that could be depended on, the diagnosis was difficult. Dr. Zentmayer mentioned another form of implantation cyst that occurs in connection with these cilia, which causes a separation of the layers of the iris, as the result of the introduction of the hair into the stroma.

Dr. Picard related a similar case in Dr. Fisher's clinic. It occurred in a young woman who, while in a butcher's shop, was struck in the eye by a part of a splinter of bone. Dr. Fisher did a curetment, and later did a second. After the second operation, he saw the cilia free in the anterior chamber. The patient has been under observation for five years, or longer. The hair has never caused any irritation. She comes in twice a year for examination. She never has any pain, although the cilia can be seen moving very freely.

A case of Disciform Keratitis. Dr. William Zentmayer reported a case of probable disciform keratitis. It was wanting in many characteristics of that condition, but was an interesting and rare corneal affection. The man first came in a month ago, with some inflammation of the eye and the ordinary accompanying symptoms. There was a slight haze in the central part of the cornea, but the most prominent lesions were the opacities underneath the epithelium, between the central opacity and the periphery. These were small (1 mm. to ½ mm. in diameter) and greenish. The case resembled very much Fuchs' superficial punctate keratitis. As the patient improved, so far as the inflammation was concerned, the central opacity became denser and took a disc-like form; but it had not the sharply defined margin that Fuchs describes. Later writers have not found the peripheral margin so dense as he described it to be at first, and have detected branching striæ permeating the stroma at the cornea. Susequent cases have shown, very often, associated with the disciform opacity, blood vessels in the stroma. These cases are the same as the cold abscesses of the earlier writers, according to Fuchs. The infection is so mild that the cornea is able to resist it, and prevent suppuration and open ulcer. Rarely is there a break in the epithelium. This view has not been sustained by others. Peters, particularly, and Verhoeff have contended that the condition is a neuropathic one; but Moeller had the opportunity of studying an eye that had been the seat of disciform inflammation, and he confirms the view of Fuchs that it is a low-grade infective process.

Dr. Posey said that some years ago he had reported two cases of disciform inflammation of the cornea, more or less typical, with a sharply defined margin. While he did not think that Dr. Zentmayer's case was that at this time, he believed that it might develop into it. He stated that in his opinion, the cases that he has observed, among which are several of atypical form, originated in injury of the central epithelial tissues. He believed that a neuropathic element might play an important part, but considered it to be, in the first place, trouble coming from without.

Report of an Unusual Case of Congenital Cataract. Dr. William Campbell Posey referred to a child of seven months, totally blind and with both lenses cataractous, upon whose right eye he had recently operated by discission. Although the capsule of the lens had not appeared thickened in the examination by oblique light made previous to the operation, he had experienced great difficulty in introducing the knife-needle through the capsule, the lens mass receding before the knife, and becoming indented like a small cyst. Perforating into the interior of the lens was not followed by the escape of lens matter into the anterior chamber; nor, when a second attempt at needling was made, two weeks later, was there any evidence that the first procedure had had any effect upon the cataract. The second attempt was largely a repetition of the first, and had an equally negative result. After the lapse of another two weeks, the anterior chamber was opened with a keratome, and an effort made to drag out the lens mass in the capsule by means of forceps; but this procedure was only partially successful, as the major portion of the now hardened lens matter remained *in situ.* Dr. Posey stated that two months had elapsed since the last operation, but the pupil was still blocked. He purposes to make a fourth attempt to clear the still partially blocked pupil.

An Unusual Case of Puerperal Blindness. Dr. Posey gave the notes of the case of a woman, thirty-three years of age, a primipara, who had lost her sight during the eighth month of pregnancy, in consequence of renal complications; vision in each eye being reduced to counting fingers at half a meter. The ophthalmoscopic findings were very striking, the picture being that of extreme edema of both retinæ, which were immensely thickened by the edema and were extensively detached below. The blood vessels were much dilated, very tortuous and flame-shaped; and round hemorrhages surrounded the discs. Cesarean section was performed by Dr. Hirst, and the patient was safely delivered of a healthy baby.Vigorous depleting measures were adopted, and vision rapidly rose as the edema disappeared. The patient was able to leave the hospital a month after labor was induced, with vision in the right eye equaling 5/40; and in the left eye, 5/60. A severe neuritis still persists in each eye, Dr. Posey stated; but numerous small heaps of pigment alone gave evidence of the previous retinitis.

The speaker then referred to the importance of ophthalmoscopic examination in all cases of pregnancy in which any form of toxemia is threatened, and mentioned several cases that he had previously reported, in which marked ophthalmoscopic changes were present without albumin's being found in the urine, a faulty action of the liver being, in all probability, the cause of the toxemia.

Dr. Zentmayer said that he had had under observation for five years a case of secondary glaucoma. The eye had a very high tension, and there was a very deep anterior chamber, with a hazy cornea and very slight injection. The point of interest was the extremely high tension, with scarcely any pain. A few days before, Dr. Zentmayer had trephined the globe. Although the patient had been under observation for five years, he had not before felt it wise to operate; but since the development of bullous keratitis he considered that some operation was called for. He had never felt safe in doing any other operation than trephining. Just before the operation, the tension was 60. A peripheral iridectomy, with the trephining, was also made. The keratitis has since improved decidedly. There remains simply a haze; whereas at first, there were large vesicles. The tension has become minus, and in Dr. Zentmayer's opinion the light perception is better than it was. In the other eye, there was a very questionable pathological excavation, which had not changed in the five years that he had been under observation.

J. Milton Griscom, Secretary.

PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting, October 6, 1914. College of Physicians, Dr. George M. Coates presiding.

Routine Use of the Bronchoscope in the Out-Patient Department. Dr. Robert F. Ridpath, Philadelphia, said he thoroughly agreed with Dr. Jackson that the use of the bronchoscope was a specialty of a specialty and should only be practiced by one or two men in a large city, as far as the extraction of foreign bodies is concerned; but a more universal use of the bronchoscope for diagnostic and therapeutic purposes might be advantageously employed. The stool patient sits on for examination under local anesthesia should not stand more than fifteen to eighteen inches from the floor. Confidence in yourself and instilled into your patient by your every gesture is one of the main points; nothing must excite patient's every-ready mental anxiety. He says if patient has a condition which has been defying ordinary therapeutic measures and has finally become a question of "I want to know what is wrong," you will have very little difficulty in getting your examination.

The anesthetizing is divided into three parts, first, the applicator saturated with a twenty per cent. cocain solution is applied to tonsillar pillars, tonsils, pharyngeal wall and base of tongue. Adrenalin is not added, or used for initial examination on account of its bleaching qualities, thereby possibly making the very condition we have been looking for. After waiting three to five minutes he then applies second application, which is also twenty per cent. cocain solution, to laryngeal surface of epiglottis, arytenoids, aryepiglotteal folds and cords. Applicator is allowed to remain in this position for a minute or two with slight pressure. Third application is made by the Skillern method. With a long tracheal applicator, bent at its distal end, on which the cotton is safely held and impregnated with ten per cent. cocain solution, is passed into the glotteal opening and by the relaxation of the muscular fibers, patient taking a deep inhalation, the applicator is passed directly down trachea to the bifurcation.

He then goes into detail telling patient what is expected of him, loosens any clothing around the neck, removes any plate teeth, etc.

Having heated and lubricated the bronchoscope tube, the left fore-finger is used to raise upper lip out of vision. The tube is then passed back to base of tongue and handle slightly elevated. He then hooks or encircles the tube with left index finger and by bringing proper pressure to bear, the glottis is brought into view. Instead of twisting the instrument in various directions and forcing tube into trachea, he advocates the patient leaning forward until there is a straight view of the tracheal lumen, then with a half turn of the tracheal tube he brings lip of tube in a direct line of one of the cords, and a gentle rotation with a slight downward pressure will be all that is necessary for the instrument to enter the trachea, when the handle is once more turned in a direct line and the scope allowed to slide down to the bifurcation. He then went into detail of various treatments which have been instituted by means of the bronchoscope at Medico-Chirurgical Hospital, mentioning trachitis, ulceration and abrasions to bronchial mucosa, bronchial or spasmotic asthma, obscure hemorrhage, stricture or stenosis of trachea or bronchi, syphilitic ulceration and obscure dyspnea.

Dr. Fielding O. Lewis, in discussing: This was the most excellent and instructive demonstration given. There are two things I would like to mention: In introducing the tube there is a certain amount of pressure in old people liable to raise arterial tension; cardiolesions and aneurysm, sometimes risky. There is no doubt that those practicing scientific laryngology must have some knowledge of bronchoscopy. There should be greater light at the proximal end of the tube rather than the distal, and the secretion is not so great. Dr. Ridpath speaks of routine use of bronchoscope; does he mean using it in all cases in the nose and throat clinic presenting laryngeal symptoms?

Dr. George M. Coates: I used the Jackson bronchoscope for many years and it was a distinct advance over any scope used previous to that time. With the Kahler-Brunings you get a larger field and better light and you are not bothered by a small light burning out. Secretions get in and short-circuit the lights.

Dr. R. F. Ridpath: The routine treatment means only routine treatment of patients showing laryngeal symptoms, asthma, dyspnea, chronic cough, or something which warrants use of bronchoscope. All aged patients are given a thorough heart and lung examination before use of bronchoscope.

The Preturbinal Operation on the Maxillary Sinus. Dr. Ross Hall Skillern discussed methods of Canfield and Sturmann. Canfield's method is too difficult and extensive; Sturmann's is over radical by removing too much of the bony structure as well as several minor defects (retention of flap, etc.). The operation advocated by the author is as follows: (1) A perpendicular incision is made slightly in front and above anterior end of inferior turbinate through all tissues extending well down into floor of nose. (2) The periosteum with overlying parts is elevated from the crista piriformis, both externally toward the canine fossa and internally toward the inferior turbinate. (3) The bone is removed with chisel, forceps and drill until the antrum is opened. (4) Sinus flushed out, mucosa anesthetized and curetted. (5) Sinus packed loosely with iodoform gauze. The gauze is removed in fifty to seventy-two hours, depending upon amount of secretion.

Dr. Coates: In discussing the merits of any operation we must consider indications for operation, whether internal or external. Any operation that can be done through the nose without the destruction of tissue should be done. Many cases we have failed to cure and have had to resort to incisions through antrum and nose. The Canfield operation sounded good at first, except that it must be difficult to perform. This preturbinal operation is really quite a distinct operation and fulfills all indications that other operations do. We can get free drainage, free opening into sinus. We have drainage as long as we want it, until sinus is in condition to take care of itself. When the disease is cured, opening closes up and we have no loss of tissue. Often we can not tell which side of nose has been operated on. Is it feasible? Can it be done as easily for patient and as easily for operator? There is no discomfort to patient, less than in other operations similar to it. In this operation, in contradistinction to others through nose, the site of operation is in view all the time; spindle piece of tissue taken out is a very necessary step; the view of the antrum is truly wonderful; condition of mucosa is made visible; polypoid degenerations and other parts which can not be seen are made visible by use of nasopharyngoscope. Dr. Skillern's results have apparently been almost perfect and apparently stay cured. There is no going around corners with packing and it is more convenient for patients. Operation is best done with a drill or trephine. There is only one point against it, especially if you have no trephine in the dispensary. By use of trephine there is less chance of driving spicules in antrum. Once this operation is learned, it ought to supplant all other nasal operations.

Dr. Alexander said he can not see how that operation can take the place of the Denker. Speaking of spicules of bone, of the trephine slipping in the maxillary sinus, and the mere fact that you have to do a Denker afterwards, speaks for itself of advantages of the Denker. The Denker reaches the most remote parts; you can see all over the sinus; can wash out just as thoroughly and directly. In use of peptone with novocain, peptone often causes infection. In using novocain you do not need to be afraid of using it liberally; 6 c.c. of novocain is all that is necessary to do a Denker operation and as to toxic effects of novocain as a reason for wanting to keep it localized, I can not see the reason. It is not absorbed that rapidly. There is no real reason to keep it in one spot.

Dr. Ridpath: One of the disadvantages of the Denker and Canfield operations is the incision through canine fossa. No matter how careful we try to be, once in a while we do have a fistula or opening formed. It gives trouble with healing. I have two cases with small fistulas that I am trying hard to cure. The incision through antrum into nose heals up very rapidly, quicker in fact than the curing of the disease. Although the opening is small, practically all the walls of the antrum may be seen. Curetting can be easily done. Advantages are numerous: We do not have any fistula forming; we have the opening anterior to the inferior turbinate, therefore any discharge gives out anteriorly and does not flow back, as in the Denker and Canfield operations; there is no destruction of mucous membranes of nose.

Dr. Skillern: So far as the operation *versus* the Denker is concerned, I might say that this operation is by no means made to supplant any of the external radical procedures. In operating on maxillary sinus we must use judgment and the form of operation is one of personal equation. I would not use my operation in old chronic cases. So far as novocain is concerned, Dr. Alexander is very sanguine about its use. If used freely toxic symptoms will result, it is seventy per cent. as toxic as cocain. Any of these drugs injected are dangerous. Action is better when peptone is used than without it. I have never yet seen a case with toxic results; often use it in my tonsillectomies; never heard of infection following its use. The only reason for infection is the fact that the solution is not sterile.

Robert F. Ridpath, Reporter.

PITTSBURGH NEUROLOGICAL SOCIETY.

Meeting, November 14, 1914. Dr. T. M. T. McKennan, President.

The Commitment of the Insane in Pennsylvania. Dr. Theodore Diller made a brief review of the commitment laws of the various states and pointed out that they differ very considerably from each other. Many of them are awkward and cumbersome and difficult of fulfillment. In most states commitment is now made by a judge; but in Pennsylvania and a few of the older states, Delaware, Georgia, Maryland, Mississippi, Rhode Island and Vermont, commitment may be made on the sworn affidavit of two physicians when accompanied by a written request for commitment made by a near relative. Only a few states make adequate provision for emergency commitments; among these are Connecticut, Massachusetts and Michigan. Provision for safe-guarding the property interests for the insane in Pennsylvania seems to be adequate. The law of Pennsylvania which permits voluntary commitment of a person by himself for a period of thirty days is illogical and can not stand legal scrutiny; for if a man is insane he is disqualified from making a contract of any kind; and he should be especially disqualified from making a contract depriving himself of his liberty.

Dr. Diller argued that the law of Pennsylvania should be so amended that all commitments should be by judge of the court based on the testimony of two physicians and written request of a near relative or officer of the law where there is no near relative. In ordinary cases the judge would not need to see the person accused of insanity and would give an order on the simple sworn testimony of the two physicians. However, provision should be made so the person accused of insanity should be allowed to defend his case. In actual practice this privilege would be taken advantage of only rarely. Dr. Diller argued that since personal liberty was one of the most fundamental rights of a citizen he should be deprived of it only by an order of the judge of the court and that two citizens who happened to be physicians of five years' practice should not be clothed with this right nor should they be called upon to accept such a responsibility.

Dr. Diller mentioned a case in which he and Dr. McKennan had testified where a suit had been brought by a woman against two physicians charging them with having falsely signed an insanity certificate committing her to an asylum. And while in all probability these physicians will be acquitted, they have been involved in a long tedious and expensive law suit which is not yet settled. And with the amendment of the law proposed such a damage claim against the physicians would not be possible as then the county or state would become liable.

The law should be amended to allow specifically and definitely for emergency commitments so that in cases of sudden and violent insanity they could be dealt with adequately.

Of the various laws in force in the various states, that of Massachusetts seems to be the best. It contains all that Dr. Diller argues for in Pennsylvania. New York is a close second; Florida has probably the worst law and Illinois the next.

As the Pennsylvania lunacy law has been written from time to time it would be well if the whole law were rewritten or codified so that it might be perfectly simple in its language and incorporate the changes advocated which are in line with the progressive spirit of Massachusetts and New York.

Dr. Diller hopes that as a result of this meeting the whole matter will be threshed out with the result that suitable amendments to our law or an entirely new law be presented for the consideration of our next Legislature.

Dr. Woodbury of State Board of Charities, in discussing: Under our present commitment law the number of cases of suspected insanity which are improperly and unjustly confined is practically nil. In recent years one case only is remembered and in this only nominal damages were awarded. I am glad we do not have the cumbersome laws some states have. As protection, the patient and his friends have recourse to habeas corpus proceedings. We must have in practice a means of commitment which is easy and prompt in its action, because as in smallpox and contagious disease in general, we must be in a position to give the proper care promptly. In those suits that have occurred few have been adjudged against the physician, for the law requires strict evidence to prove wrong doing in commitment and treatment. The commitment blanks must not be too complete, for it is hard to get the right information. The present method of commitment is working no injustice to the public. It is easy for the public, the physician and the institutions, and while I agree with Dr. Diller theoretically, I believe our present law is a good one practically.

Judge Johnson of Chester County: In my opinion the state should assume the burden of the care of the insane, abolishing our present system of both state and district care. The cities and counties are in debt; the state is not, and so can afford to carry the burden. As to the exact method, all may not agree. At the present time something more than custodial care is needed; prevention and treatment are more important and to my mind the state is better able for this job. We must try to increase the percentage of restorations, and thus release the state of many who are kept in slavery and ought to be free, perhaps under some system of parole, etc. If it is impossible to treat patients individually we can do much by properly grouping them.

In my opinion, our system of commitment in Pennsylvania is easily worked, no other system is so perfect. It is in the hands of the doctors, the class best fitted to take care of it. Two physicians certify simply to a patient's mental condition and this allows that he may be detained only, and may be treated. To have a trial by jury or to appear before a judge with a lawyer is behind the times. The present method is easy and immediate and I can not see any better.

Judge Shafer of Allegheny County: The present commitment law in Pennsylvania I consider very good, but it would be better if the whole law were codified. If it would take 300 pages to codify the present law, as has been said, that would indicate a necessity for simplification. To adjudge a man a lunatic with reference to his property rights requires a commissioner with a jury of six; with reference to crime committed or in danger of being committed, the usual method is to arrest him. Many individuals, however, who are insane, commit a crime and when arrested and tried the insanity issue is not raised. This ought to be done automatically, if it is the case. This whole question is much in the air. In some cases where there is a suspicion of insanity, the individual may be arrested on a charge of disorderly conduct and sent to jail for ten days. The jail physician then has a chance to make an examination. In practice this method will work well in certain cases. In other cases where, as against being a lunatic, so called, the individual may be "weak-minded" or "feeble-minded" it is possible for certain relatives to petition the judge of the court for a hearing. Testimony may be given and if the judge finds the individual "feeble-minded" he can appoint a guardian. There is no jury in these cases. The guardian's powers were at first inadequate but later amplified. This act, however, has been much abused, because it has been made to apply to people who are really lunatic, since later the word "insane" was added. The trouble arises because depending on whether insane or feeble-minded the proceeding may take the course that suits the whim of the petitioners.

Attorney F. C. McGirr, Pittsburgh: It must be remembered that a commitment refers simply to sending an individual to a hospital for care and treatment; it does not legally establish the question of his insanity. The physician can not really be held responsible if he has made a mistake, an error in judgment; he can be held responsible if he made dishonest statements or failed to make a careful examination. Another way to commit a person is by petition to the court. The judge then appoints a commission consisting of a lawyer, a physician and a layman to investigate and report to him, whereupon the judge issues the proper order. While more expensive than the usual way, this method is safer, as no liability is assumed by any one. In making out the commitment papers the physicians must be honest and careful, not negligent and deficient in professional skill. These last two are not unjustly interpreted. The law does not require that he shall form the right judgment; it does require that he shall not take snap judgment, or accept hear-say evidence without investigation, or make a careless, superficial examination. A physician who had made an honest error of judgment would not be in much danger. Now while this is so, yet it is true that physicians are exposed to a suit which any one may bring, no matter what the merit of his case; and these suits are expensive to defend. Mr. McGirr agreed with Dr. Diller that the physician should be protected against this; and to that end the law should be amended.

Dr. H. W. Mitchell, Warren Asylum: The question of conserving the legal rights of the physicians signing a commitment is important. Various states have various methods and some are foolish and some cumbersome. To bring a patient to court is harmful and in the majority of cases, eighty per cent. say, it is unnecessary, for the patient would be indifferent. So it would not seem wise to make a court appearance a uniform requirement. It would hardly be necessary to treat all alike. As it stands now the law of commitment works well in this state with few exceptions. Dr. Mitchell is of the opinion it would be best to wait until the question of state care is decided, when the whole matter may be gone over and improved where needed. State care is favored, but the difficulties toward making the change are many and can not be overcome at once.

Dr. C. R. McKinnis of Marshalsea: The present voluntary commitment act is inadequate and should be amended because such patients must pay. They ought to have the privilege of free care which under the present law is denied them.

Mr. F. Torrance of State Board of Charities: As for state as against county care, Mr. Torrance favors the present system because he believes the physical difficulties toward obtaining complete state care are very great. The present institutions are overcrowded; it would take years to get proper accommodations. If, as alleged, county care at present is not so good as state care, it is due to the fact the law is not being obeyed. By law county care shall equal the state, and if it is not good it is our duty to make it so.

Mr. A. S. Miller of Woodville, County Home: Our present commitment law is a good one, and works well in practice no matter what the theoretical objections. Many cases require prompt action, as in the maniacal patients, without friends or means for example; and such emergencies are well served by our present method of commitment.

Dr. T. M. T. McKennan, Pittsburgh: In my opinion our present commitment method is wrong, it ought to be supplemented in some way to take the legal responsibility away from the physicians. In Massachusetts the probate judge will go to the institution and hear the testimony of the two doctors who have made the examination, thus relieving them of the responsibility to a possible suit. As for state care, I believe it must be the only thing. The much lauded Wisconsin method does not after all work out equitably. It is impossible to get uniform care except under the state system. We can then have better buildings, better doctors, nurses and employees.

Dr. E. E. Mayer, Pittsburgh, after explaining the need for detention hospitals in various locations: If we had state care it is likely that such institutions would be arranged for.

George J. Wright, Secretary.

COUNTY SOCIETY REPORTS.

ALLEGHENY—November.

The Allegheny County Society met November 17, in the Assembly Room of the Pittsburgh Free Dispensary Building, President Hawkins in the chair.

Dr. J. F. Edwards, head of the Pittsburgh Department of Health, addressed the society on the subject of "Foot and Mouth Disease," which he stated to be of more importance from an economic view than from the standpoint of public health. Cloven-footed animals are chiefly attacked, principally cattle and swine. There have been numerous epidemics in Europe since the sixteenth century. Until recently it was not prevalent in this country. In 1839, it caused great cattle loss in England, causing quarantine against foreign cattle. In this country, four small epidemics have occurred. The last one in 1908, starting in Michigan and communicated to Buffalo, affected the central and eastern states and was stamped out in four months' time by the energy of the well-known veterinarian, Dr. Leonard Pearson. The present epidemic originated also in Michigan. Horned cattle are chiefly affected in this disease, from which no definite organism has yet been isolated.

The disease is due to a filterable and ultramicroscopic virus, as first demonstrated by Löffler and Frosch. It is as contagious among cattle as measles among children, and means of conveyance are dung, utensils, and anything used around cattle. The incubation period is two to eight days. The symptoms are, first, fever and lameness, then slobbering from the hyperemic oral mucosa, and smacking of lips, the last symptom being regarded as practically diagnostic by veterinarians. In a few days vesicles appear in the mouth, around the teeth, and the membrane lining the gums, on the hoofs and toes and just above the hoofs. The udder may also be involved. The vesicles become purulent, break down, and form ulcers, the tongue may be entirely denuded. The painful mastication causes emaciation and, therefrom, loss of milk and meat production. The reduction in each animal affected runs from 25 per cent. to 50 per cent. In humans, the disease is practically the same; the mouth symptoms are identical, fever, malaise, muscular pains, cramps, and, in children, vomiting and possibly convulsions. In a few days mouth ulcers appear.

Of transmission of this disease to man there is no great danger, although there is a little. The mortality among cattle is not great, as is also the case in humans; where, however, death has occurred in weak children, where the mouth condition causes loss of the proper nutrition. Transmission is avoided by boiling or pasteurizing all milk, as the germs are killed in fifteen minutes at 145° F., so that ordinary pasteurization is sufficient. There is no need for alarm. The present policy of the authorities is rather to quarantine than to indulge in wide-spread killing.

Treatment: In animals, local application of caustics to the ulcers and administration of Glauber's salt. In humans, local antisepsis, and, if required, stimulating applications to the ulcers.

Dr. C. R. Jones read a paper entitled, "Some Clinical Observations in Duodenal and Gastric Ulcer." The causes of the lowered resistance encountered in the stomach and duodenum in ulcer are shock, grief, the climacteric, overwork, unsuitable food, streptococcic and other bacterial infections. Such causes do not attack these organs alone; other organs are affected by the same causes at the same time. For example, gastric, or duodenal ulcer occurs with appendicitis or tonsillitis, or other affections, appendicitis being the most common accompaniment. The occurrence of ulcer after appendectomy is not unusual. Experience teaches that the external appearance of the serosa can not determine ulcer. Careful, clinical study is necessary and exposition of the mucosa. It is not necessary for ulcer to penetrate the entire coat of the stomach to cause the syndrome. Incidence of both gastric and duodenal ulcer points to a common infection. I herewith report two of my cases, in illustration.

Case 1. Mr. C., thirty years old, was treated for one year by a local physician, until eight months ago. Symptoms epigastric pain, morning vomitus sometimes containing blood, pain to the length of the tenth dorsal vertebra, hyperchlorhydria, blood in the stools. After a rest cure in the Mercy Hospital, patient had an acute attack of appendicitis with the usual symptoms. The appendix was removed by Dr. G. L. Hays, the recovery being uneventful. Some time later, an unrestricted diet was indulged in for a short time when symptoms of ulcer returned, and November 1, 1914, a profuse hemorrhage resulted after some unusual exercise. The blood disappeared after ten days, the duodenal tube has been used twelve days, and the patient is still being so treated.

Case 4. The patient, a male, thirty-one years old, experienced a sharp, epigastric pain, also described as a heavy weight, lasting eight days, then becoming scarcely perceptible, but returning upon eating. He had a history of rheumatic attacks, affecting all the joints, some throat trouble, and some occlusion of the nares. There was always more or less stomach pain, always returning after eating. His father and three brothers had identical symptoms. One brother died, exhibiting the symptoms of acute perforation, and had always had trouble when working. Another brother died suddenly at the age of twenty-six years. The third brother, twenty-six at present, has the same symptoms. The patient presents the appearance of being fairly well, weighing 165 pounds. Blood pressure was 118, diastolic 100, hemoglobin 75 per cent., red blood cells 7,400,000, leukocytes 6000. He has a mitral stenosis. Stomach contents are practically normal, no occult blood in stools. Diagnosis was gastric or duodenal ulcer. The symptoms returned July 25, 1913, in an aggravated form, and an exploratory incision was made by Dr. G. L. Hays, at the Mercy Hospital. An acutely inflamed appendix was removed, with adhesions to mesentery judged to be three weeks old. Adhesions bound down the posterior of the duodenum to the gall bladder, which was acutely inflamed, and contained very stringy gall, but no stones. Which condition was primary was questionable. After two weeks' convalescence, complaint of hunger pain and epigastric tenderness followed. The string test was positive, and hypermotility was present, the stomach emptying in thirty minutes. There was no occult blood. Diagnosis was subsequently confirmed by Dr. Friedenwald, at Baltimore, and by skiagraphs.

Dr. G. C. Johnston, in explaining the skiagraphs illustrating Case 4 of Dr. Jones' series, remarked that the diagnosis of duodenal ulcer is made in three ways: (1) The European method, by use of fluoroscope entirely; (2) the Mayo method, by hypermotility of stomach and retention of five or six hours; (3) Boston's method, Dr. George's method, by deformity of duodenum. Enthusiasts of each of these methods claim too much for their favorite. We believe all are right. A well-formed duodenal cap, such as you see in the series of plates I am now showing, excludes duodenal ulcer. In Dr. Jones' case, plates of which I now show, we were able to get no duodenal cap, after several plates were taken.

Dr. J. W. Boyce read a paper on "The Use of the Fluoroscope in General Medicine," a plea for the taking up of fluoroscopy by the general practitioner, who thereby would greatly extend his diagnostic sphere. Some of the best fluoroscopic work of Europe is done by general practitioners, as well as in America, no deep technic being required. I am better satisfied with my fluoroscopic work than with my physical diagnosis. Dr. Boyce showed by numerous plates what a tyro in fluoroscopy, with a $400 to $600 outfit, may attain with the same attention as to physical diagnosis, using the evening, as more convenient for its darkness, although this time is apt to handicap gastrointestinal work. Dr. Boyce then explained plates illustrating the location of bismuth collections in stomach and intestinal affections, particularly in Lane's kink, prolapsed, and atonic stomach. Chest work can be done showing diaphragm motion, swallowing, calcified glands, size of lungs, size and position of heart, the light appearance of normal lung, the dark shadow of lung in cardiac enlargements, pericardial effusions, aortic aneurysms, and pneumohydrothorax. Plates in illustration of the most of these were explained. Pneumothorax may be missed, but may be picked out, as in one of these plates, where you see the black shadow delineating the collapsed lung very plainly. The vertical heart was never diagnosed except by the roentgen rays. (Four illustrations shown.) Tubercular lesions are better determined by the rays than otherwise. Early lesions are often demonstrated, but are so faint as to be ignored by preconceptions of the case. As to healed tubercles, thirty or forty per cent. of shadowed apices may show healed tubercles. In eighteen cases, nine diagnosed as tubercular, and nine as nontubercular, contrasting a good physical diagnosis against my poor fluoroscopy, there was disagreement only in one case.

Dr. C. N. Schaefer, in discussing, pronounced fluoroscopy in chest and abdominal work as very valuable to the internist and general practitioner, particularly in cardiac hypertrophy, foreign bodies, neoplasms, and pericardial effusions in the chest, and foreign bodies, neoplasms, adhesions, calculi of gall bladder, ureter, and bladder, and intestinal obstruction in the abdomen. Interesting in my experience was a case where a wax candle had slipped into the bladder and had become incrusted. Also, a case in which a large sized sewing needle was located in the stomach of an infant, where possibility of swallowing so large a needle was dubious. A few minutes decided the question, the needle was easily and speedily removed by an operation, the infant losing but one feeding. The roentgen ray and fluoroscope have led to fewer mistakes than any other method of diagnosis.

Dr. G. C. Johnston remarked that Dr. Boyce's work is very valuable, but due more to his being a good internist than to his fluoroscopy, which is accurate. Later Dr. Boyce will not be satisfied with fluoroscopy, but will go into radiography. I fluoroscope every chest and abdominal case coming into my office, but I always use both methods. The radiograph is invaluable as a permanent record; a fluoroscopic picture is hard to remember. Comparisons should be made of different positions, and we can not make diagnoses without plates. Fifty per cent. of duodenal lesions alone can not be diagnosticated upon the screen, so we are compelled to rely upon plates. In chest work the chief danger is in finding too much; one should curb the desire to make a diagnosis of incipient tubercular lesions. Many so diagnosed represent where the patient has been the victor instead of the victim.

Dr. N. Shillito cited a case of a male patient at the Passavant Hospital, who had a mass the size of an orange about the navel. This was not removed in a previous operation. It was thought to be an aneurysm, as bruits and thrills were elicited. A vigorous cathartic expelled a fecal mass. Can the rays make a differential diagnosis in such a case, from aneurysm especially?

Dr. G. C. Johnston: The rays could make such a diagnosis by injection of the colon, but not by means of the ordinary bismuth meal, but possible malignancy could not be excluded.

H. P. Ashe, Reporter.

BRADFORD—November.

The Bradford County Medical Society met in the Grand Jury Room, Towanda, November 10, and was called to order by the secretary at 1:45 p.m. Dr. O. H. Rockwell was elected president *pro tem.*

Dr. Terry, chairman of the committee appointed at the October meeting to report on a new constitution and by-laws, recommended the adoption of the Model Constitution and By-Laws approved by the state society. Same was ordered sent to each member before coming up for action at the December meeting.

A communication from the Pennsylvania Society for the Protection of Scientific Research was read, and on motion the chair was authorized to appoint a member to serve as a director of the aforementioned society and the remainder of the communication was referred to the program committee. Chair appointed as such director, Dr. G. H. B. Terry, Wyalusing.

Dr. George W. Hawk, Sayre, read an instructive paper on "The Treatment of Minor Surgical Injuries." In the discussion of this paper, Dr. Terry reported two cases of severe infection through the vesicles caused by poison ivy, in one of which there was much loss of connective tissue and in the other of function of hand. He emphasized the importance of not opening the sheaths of tendons unless already infected and the necessity of prompt opening if infected. Dr. Pratt was much pleased with the paper but could not agree with the author in recommending whiskey or brandy as a stimulant as he doubts its efficiency. Dr. Rockwell called attention to infections in tannery workers caused by the hairs coming in contact with denuded skin or puncturing the skin. He has found a sixty-grain-to-the-ounce solution of silver nitrate a most useful local disinfectant in these cases.

Dr. Charles A. Haines, Sayre, read a very practical paper on "The Relation of the General Practitioner to the Specialist." Drs. Johnson, Sr., and Pratt commended the paper, and the latter added that no one should become a specialist until he has had several years' experience as a general practitioner. Dr. Terry said that there were three things to be considered: First, the patient; second, the general practitioner; and third, the specialist. He thinks that the patients and those who may become patients suffer if they allow their family physician to deteriorate. The family physician should keep up in minor surgery in the interest of patients who may be injured at a time and place when it is impossible to send them to a hospital or a specialist. If nearly all of the minor surgery goes to a hospital or to specialists the general practitioner will not become equipped for emergency work.

On motion, Drs. Hawk and Haines were requested to furnish copies of their papers to be submitted to the Pennsylvania Medical Journal for publication. C. L. Stevens, Secretary.

CHESTER—October.

The Chester County Society held its meeting at the Phoenixville Hospital, October 20, being the guests of the local and auxiliary staff of the hospital, at one o'clock. A luncheon was served and after cigars had been lighted and the members had congratulated their hosts on the excellence of the repast the program of the afternoon was taken up.

Dr. M. Howard Fussell of Philadelphia gave a talk on "Vaccine Therapy in Smallpox, Typhoid Fever, Acne, Furunculosis and the Serum Treatment of Diphtheria, Tetanus, Cholera, etc." Autogenous vaccines are preferable and should always be used if possible unless you can isolate your germ and then you may use stock vaccine, but the majority of infections are of a mixed variety or of more than one strain. He condemns the use of the so-called phylacogens and said the makers had failed to prove by clinical test what they claim for their product. In diphtheria give antitoxin early and in sufficient amount that you will not have to repeat. Surgical cleanliness must be strictly observed in vaccination to prevent infection. Pasteur treatment of rabies is more simplified and dosage and instructions are forwarded to the family physician. If the patient is too poor the county will assume the cost.

Dr. Edward B. Krumbhaar of Philadelphia read an excellent paper and gave a report on "Three Series of Cases of Typhoid Fever Treated by the Use of Serum," his experimental work being carried out at the Pennsylvania Hospital. He does not advise its use if complications are present or if the case is not diagnosed prior to the twenty-first day of the disease.

These papers were thoroughly discussed and many interesting points brought out.

President Bullock, through courtesy, extended the honors of the chair to Dr. Reeder, president of the staff of Phoenixville Hospital, who presided. A committee consisting of Drs. Richmond, Pennell and Hutchison were appointed to draft resolutions on the death of Dr. Linwood S. Corson, Glen Moore. Another committee, consisting of Drs. Kerr, Jackson, Taylor and Pleasants, was named to lay plans and conduct a memorial in honor of Dr. George S. Spratt of Coatesville who has practiced medicine for a period of fifty-three years.

D. Edgar Hutchison, Reporter.

CLEARFIELD—October.

The Clearfield County Medical Society held its regular meeting at Cottage Hospital, Philipsburg, on October 14. On account of the inclement weather many were prevented from enjoying one of the best meetings we have had for a long time, however nineteen members and three visitors were present and all seemed to be delighted that they had been there. Let me assure you who do not make as strenuous effort as you could to get to the meetings, that this is not the only treat which you will miss if you do not take heed and mend your ways. The meeting was called to order by President Woodside and the minutes of the previous meeting were read and approved. The secretary read a letter from State Secretary Stevens regarding the change made in the Constitution and By-Laws, after which a motion prevailed that the dues for the coming year be raised to $5.00 in order to meet the increase in state society dues, and Drs. Quigley, Wilson and Reiley were appointed as a committee on revision of Constitution and By-Laws. Under the new order of things the fiscal year of the state society will begin on January 1, instead of September 1, as heretofore, and when you shall have paid your dues for the coming year it will place you immediately in good standing in the state and county societies for the next sixteen months or until January 1, 1916. Then too heretofore unless the whole county society was in good standing in the state society, which it often has not been until very late in the year owing to the fact that there was always some men who would not pay up until the last minute, and the treasurer could not remit to the state dues on that account, every man in the society was in arrears to the state society and was not eligible to the benefits of the state society of which the defense fund is a very important factor. But now as soon as your dues are paid to the county society the secretary takes out that portion which should go to the state society, which this year amounts to $2.75 for the sixteen months, and sends it direct to the state secretary and you are immediately placed in good standing, regardless of whether the other fellow pays his dues or not, and the fellow who fails to pay his dues to his county society is the only one who suffers.

A motion prevailed that, aside from the business session, the November meeting be entirely social and the following committee was appointed by the chair to arrange for the banquet: Drs. Cowdrick, L.

F. Stewart and Gordon. The meeting is to be held in Clearfield.

The president called attention to the death of Dr. F. B. Read and appointed Drs. W. B. Henderson, S. C. Stewart, and A. C. Lynn to draw resolutions, which will appear in the *Bulletin* together with a picture of our beloved brother practitioner.

The Board of Censors submitted its report on the case which has disturbed the meetings for so long and, after proper concessions had been made by the accused, the board recommended that no further action be taken on the case by the society. The report and recommendations were, by motion, accepted as submitted.

Dr. W. B. Henderson, who had taken such pains to arrange for us a most excellent clinic on trachoma and allied conditions, introduced Dr. C. P. Franklin of Philadelphia, of the Committee on Conservation of Vision of the state society, who gave us a most interesting talk and clinic on these conditions. Dr. Henderson had present a number of patients in different stages of trachoma as well as some others which might be mistaken for trachoma by one who had not seen a number of these cases. Dr. Franklin handled his subject in a most able manner not only showing that he had it thoroughly in hand but also made it so clear that not one who was present could fail to understand the condition and should be readily able to diagnose a case when it presents itself.

This was a most profitable meeting and much gratitude is due both Drs. Henderson and Franklin.

Dr. S. C. Stewart paid his dues for 1915 and received receipt No. 1, a new form which is furnished by the state society. Now men, follow promptly his example, and get your blue receipt which places you in good standing in the state society, pays your subscription to the Journal, makes you eligible to register at the state meeting next fall, entitles you to the Benevolence Fund, and the Defense Fund, and marks you as an up-to-date fellow all around. The secretary has a supply of these receipts and is ready to send you one by return mail on receipt of dues.

J. M. Quigley, Reporter.

DAUPHIN—October, November.

At the meeting of the Dauphin County Society, held in the lecture hall of the Harrisburg Academy of Medicine, October 5, Vice President Brown presided.

Dr. H. B. Walter read a paper on "Some Phases of Abortion and Its Treatment." The paper in the first place defined abortion and then dealt with the uncertainty, and great need of confidence on the part of the young woman during the beginning months of the first pregnancy. He discussed the period at which fatal termination ensues and spoke of the need of giving free advice and direction so as to pass successfully this critical period. By doing this the tendency to abortion in one out of every five or six pregnancies would be avoided. Many a first abortion could be prevented provided the woman would consult her medical advisor at its first threatening and thereby give him the opportunity of investigating for the cause with the thought of instituting appropriate treatment. The writer deplored the great loss of life through the unfortunate interruption of a normal pregnancy and regretted the necessity of assistance to those who innocently terminate a pregnancy by imprudence.

After the first unavoidable abortion the physician can usually, by care, prevent a recurrence of the misfortune, but only if he has the assistance of the parties concerned. The general health, the habits, the uterine state and the paternal relations must be carefully looked into and, more than that, directed provided there is a tendency to abort persistently. The earliest symptom should be watched for and regarded seriously, the patient being put to bed and there treated for a week or more with the suggestion that strict obedience must be maintained. The recurrence of the date of the usual menstruation should be remembered and carefully guarded. A few days in bed at each period until after the third month of pregnancy has been passed will be of great help. When abortion is unavoidable the care of the patient is of great moment. The least amount of investigation per vagina, the safer for the patient. The period of interruption will largely determine the treatment. The emptying of the uterus is essential and the gloved finger is the best curet.

The discussion was entered into by several physicians who cited cases of interest and who gave a brief résumé of the methods of procedure of former times and those of the present. The point was well brought out that the instrumental curetage after abortion is not of value and, more than that, is capable of doing damage. Several cases were cited where curetage in the case of a septic condition of the uterus did not relieve the condition but terminated fatally.

President Culp called to order the meeting of the Dauphin County Society November 3, at 8:30 P.M. The many members present showed great interest in the papers which were read, and afterward expressed themselves as being much benefited by the able presentation of the subject of "Medical Organization."

Dr. John McAlister, president elect of the state society, gave a clear description of the "Aims and Objects of Organized Medicine." He said in part: Organization is an apparent necessity of modern life. To bring into one compact organization the entire medical profession of the county, the doctors are better able to serve their patients, as they coordinate their efforts and studies in medical societies. The medical society is the most efficient agent to extend medical knowledge to the profession and to correctly inform the public. It has been the most efficient agent in securing the enactment of medical laws. It has been the most efficient agent in protecting against fraud and quackery. Organization and coöperation are the keynote of success to-day. The value of membership in a society is what each member himself sets upon it. We have strong organization with united coöperation and we will be a mighty factor in the welfare of the public and profession.

Dr. Hiram McGowan gave an interesting "History of the Local Medical Societies." He defined history as an aggregation of facts. Events occurring a century or less ago, if not accurately recorded, are useless. It should not be tolerated. The representative men of the medical profession were God-fearing men. They took their standard from the decency born in them, cultivated through their natural instincts and strengthened by their associations. Every local society at the time of its organization was advised to adhere strictly to the medical code. Be ethical. In no shape or form tolerate the exclusive dogma. Now practically every member of the county or local society accepts the standard enunciated. The extent to which these principles were put into practice depended upon the conviction of the individual. In the short time alloted to him Dr. McGowan brought out many points of interest in the organization of the state and the Dauphin County societies. He told of the manner in which the present organization grew from a very small beginning, at a time when the active men realized that organization was the strength of the profession. The first medical society in the state was organized in Chester County, February 5, 1828, with the following object: "The object of this society is to cultivate the interests of medical science, as well as fraternal intercourse among the members of the profession in the state." At a meeting of this society held in West Chester, December 1, 1847, Dr. Worthington offered the following preamble and resolutions which were carried: "*Whereas*, No State Medical Society exists in Pennsylvania, and believing that such an institution would greatly contribute to the advancement of medical knowledge; therefore, *Resolved*, That it is expedient to hold a convention at such time and place as may be hereafter agreed upon, to take this subject into consideration, and effect such a permanent organization as may be deemed best suited to accomplish the object in view." The Dauphin County Society was organized in February, 1866, having the following as its first officers: President, W. W. Rutherford; vice presidents, George Dock and C. Seiler; secretary, M. H. Egle; and treasurer, S. S. Shultz. In the same year the society sent delegates to the state convention. Dr. McGowan clearly traced the history of our society up to the present day, thereby showing that we have advanced considerably in numbers and especially scientifically.

Dr. Benjamin Rush was quoted as saying, "There is not sufficient social intercourse among physicians. They seldom meet except in the sick-room. From what I have seen of medical men I am painfully convinced that this is one, if not the chief cause, of the frequent misunderstandings of which we are so often accused by the public.

Dr. Thomas S. Blair, read a paper on "The Difficulties of Organized Medicine," and rather intimately showed that the more serious troubles come from within the profession itself. These internal troubles come from the rank and file failing to coöperate with their leaders in any active way, thus throwing the odium of the alleged "medical trust" upon the shoulders of men who, were they supported, would appear to the public in a vastly different light. The need for money and the greed for money caused many discredited methods to be employed because they are profitable. Supporting the work of the Council on Pharmacy and Chemistry, the essayist would grade up the profession, the medical societies, pharmaceutical manufacturers and medical journalism to conform to standards that should be practical and not merely academic but a logical addition to the scientific work of reform. He was severely critical of doctors who invest money in discredited and selfish lines of medical exploitation, he would establish a strong medical society censorship, making an effort to look up but reach down.

After an interesting discussion by members of the society the meeting was adjourned. Those present entered the library of the Academy of Medicine where a buffet luncheon was served and a very pleasant social time was had for an hour or more.

More than thirty members of the society took advantage of the invitation from the Philadelphia County Society to go to Philadelphia, October 28, 1914. We were most excellently entertained by the society which saw that there were interesting clinics in medicine, surgery, and the specialties during the afternoon. The society had for the reader of the paper before its regular meeting, Dr. John B. Deaver, who gave a most interesting and instructive description of abdominal pains and their significance. Drs. Ellenberger and McAlister from our society opened the discussion. We left Harrisburg at 8:45 in the morning in a chartered chair car, took luncheon at the Medico-Chirurgical Hospital and returned leaving Philadelphia at 11:55 P.M. We extend to the Philadelphia Society many thanks for their hospitality. It certainly was a day well and profitably spent.

H. Hershey Farnsler, Reporter.

LANCASTER—October, November.

The regular meeting of the Lancaster City and County Society was held in Malta Temple, October 7, sixty-nine members being present.

Dr. C. J. Hunt of the Pennsylvania State Health Department read a paper on "The Significance of

Tuberculosis in Childhood." The paper was discussed by Drs. Hershey, Miller and Hunt. A vote of thanks was extended Dr. Hunt.

Dr. Frank G. Hartman reported that as one of the delegates to the state society at Pittsburgh he attended the meetings of the House of Delegates and that the most important special business had been the adoption of the new constitution of the state society. According to this constitution the presidents of the county societies are no longer members of the House of Delegates. This action created quite a furor among the smaller societies and an amendment, to be voted on next year, was presented restoring the presidents to the House of Delegates. This new constitution would reduce our voting power in the House of Delegates from three to two.

Dr. Appel, as a trustee of the state society, gave a full report of the workings of the state society and explained the change in the fiscal year. Hereafter the fiscal year starts on January first and no member is in good standing nor is he eligible to the benefits and protection of the state society until his dues are paid.

The legal committee represented by Dr. Atlee, introduced Oliver Shaeffer, Esq., who had been employed to look after the interests of the society. Mr. Shaeffer reported that at his investigation two suits had been brought against L. O. Howard, manager of the Radio Institute and he felt very confident of conviction in both cases. He also reported that after communication with the State Board of Medical Licensure he had mailed each member of the society a circular letter asking for names and information concerning illegal practitioners, and he urgently requested that the members answer promptly, so that he may take steps to get rid of these charlatans.

Dr. C. P. Stahr, chairman of the committee appointed to draw up suitable resolutions in regard to the death of Dr. Michael W. Raub, read the resolutions, which were received.

Dr. J. J. Newpher, secretary of the board of censors, read the report of the censors in regard to the case of Dr. ———, who had been accused of fee splitting in violation of the constitution. The censors found the doctor guilty which severs his connection with the society. The report of the censors was accepted by the society.

Dr. Roebuck reported a case of mastoiditis followed by general sepsis from breaking down of a thrombus in the lateral sinus.

The November meeting was held at Malta Temple, November 4.

Mr. J. Edward Goodell, city chemist and bacteriologist, read a very clear and concise paper on "Autogenous Vaccines." It was discussed by Drs. Hershey, Lehman, Koser, Davis and Mr. Goodell.

Dr. Donald McCaskey's paper on "Bier's Hyperemia" created some heated discussion.

Dr. Frank Alleman read a paper on "The Treatment of Accidental Infections," which was discussed by Drs. Hershey and Alleman. A vote of thanks was extended to Dr. Alleman.

Dr. S. W. Miller read the resolutions in regard to the death of Dr. Harry Huber and it was ordered that they be spread on the minutes and that a copy be sent to the widow.

Dr. T. B. Appel moved that a committee be appointed to look over the model constitution for the county societies as found in the Journal. This committee was appointed as follows: Drs. Hartman, Roebuck, Newpher, Lehman and Day.

Henry B. Davis, Reporter.

MONTGOMERY—October.

The meeting of the Montgomery County Society was held at Charity Hospital, Norristown, October 7.

Dr. Henry C. Welker read a paper on "Esophagotomy." He outlined the history of this operation, and quoted several cases that have been reported by prominent surgeons. He then reported his own case, a child, three years old, who had swallowed a penny. X-ray examination located the penny at the suprasternal notch. After repeated attempts to remove the penny with long forceps, and after a consultation with Dr. C. H. Mann, it was decided to perform an esophagotomy. The structures being small it was with great difficulty that the esophagus was laid bare, but in doing so there was little bleeding and no vessel had to be ligated. A soft rubber catheter was passed by the mouth to serve as a guide. The penny was found in the posterior wall of the esophagus and was surrounded by mucopus. After the penny was removed the area was swabbed by a three per cent. solution of tincture of iodin, the edges were brought together and sutured by twenty-day catgut. An uneventful recovery took place, and Dr. Welker showed the child before the society.

Dr. Pyfer in discussing the case said he felt very sure that the penny could have been removed by using the esophagoscope. He demonstrated this instrument, and the manner of using it. The case was further discussed by Drs. Thomas, Miller and Jameson.

At the meeting of October 21, Dr. Randle Rosenberger gave a lecture to the society on "Oral Sepsis." He spoke upon the different germs that could be found from a swab taken from the cleanest mouth. He spoke particularly of pyorrhea alveolaris. If the disease is limited to the upper third of the tooth it may be curable; if found deeper the prognosis is grave. It has been found that an organism of the ameba group is often the cause of pyorrhea. Upon this principle emetin often does good, just as is used in amebic dysentery. Autogenous vaccines also give good results. As a prophylactic measure the mouth should be rid of all bad teeth, roots should be crowned, stumps removed, cavities filled and teeth brushed thoroughly at least three times a day. Vincent's angina is a rather rare disease due to the spirillum and fusiform bacillus of Vincent. It may be located in the tonsils, gums, cheeks, or larynx. Either germ may be found in the normal mouth, but both are found in Vincent's angina. In suspicious looking membranes of the throat always give a large dose of antitoxin, and if necessary make the diagnosis afterward.

The discussion was opened by Dr. Buyers and continued by Dr. A. R. Place, a prominent dentist of the town. Drs. Swalm, Graber and Welker also discussed the paper.

Edgar Stanley Buyers, Reporter.

PHILADELPHIA—November.

The Philadelphia County Society met November 11, at 8:30 p.m., President Robinson in the Chair.

Dr. John J. Gilbride reported a case of acute appendicitis with abscess formation in which the infecting organism was the colon bacillus, and in which the patient had a severe glycosuria. Recovery followed operation and drainage.

In the symposium on "The Eye, the Ear, the Family Doctor," Dr. George E. deSchweinitz read a paper entitled "Concerning the Commoner Diseases and Injuries of the Eye and Their Treatment."

Dr. Samuel D. Risley: Under the light of modern research we have discovered that things apparently simple are complex. In no form of disease is this probably so much observed as in conjunctivitis. By the educated eye and with laboratory methods many essential differences, not recognized by casual observation, are discovered. We must all have been impressed with Dr. deSchweinitz' statement that to be an ophthalmic surgeon one must first of all be an educated doctor. With increased experience I am more impressed with the truth of what has been said to-night, that if tubercular infection of the eye does not stand first as an etiological factor in infections of the uveal tract and of the cornea it is very close to first in etiological importance. Again and again cases of headache have upon close study been traced to this infection.

Dr. William S. Newcomet: Reports of cataracts being cured by radium come to us from outside the city, but I can not support any such form of treatment. We occasionally get good results with radium in the treatment of small epithelioma around the lids. In cases of true rodent ulcer, however, I believe we gain nothing, unless we cut wide of the mark and bring the tissue together by a plastic operation. In reported cases of cure there is failure to discriminate between the two conditions.

"Some Considerations of the Newspaper Element in Public Medical Instruction" was read by Dr. Hiram Woods, Baltimore. From the attempt of the medical profession in Baltimore to make use of the public press, certain lessons have been gathered. Three phases of our relations with the daily press are: (1) Advertisement of patent medicines, various medical appliances, electrical treatment, opticians' cure of remote symptoms by glasses, etc.; (2) descriptions of remarkable, or supposedly remarkable operations, details of illness of prominent persons, etc.; (3) legitimate educational purposes. The first of these three, advertisement, has an influence upon the value of an educational article. Certain classes of people receive more lasting impressions from the claims of some medicine published on the first or last page than from a carefully prepared article stowed away in small type on the editorial sheet. Upon the second count we have found that men whose cases did not, and others whose cases did get into the papers, disapproved of the publication of unauthorized accounts of an illness or surgical operation. A committee was appointed from our profession to confer with the newspaper representatives. The report of our committee, however, failed of acceptance with two out of three newspapers, mainly because editors did not wish to curtail their plans for running down a "story" in their own way. In our relation to the press, no one will question the value of the newspaper as a means of reaching the public, there can be no doubt of public interest in medical matters; and, I think we may also say that if we have advanced in preventive medicine, it is our duty to instruct the public in means of prevention. To make such instruction helpful, however, one must put himself in the place of the ignorant and the more or less sensation-loving portion of the public, those most in need of our instruction. For this work the help of the experienced reporter should be welcomed.

One point especially insisted upon by our Baltimore newspaper friends is that medical articles should be signed by a man known to understand his subject. Success in newspaper instruction must depend upon professional and journalistic coöperation. Possibly the solution lies in the medical society assuming responsibility for the article while giving the name of the author. Newspaper public instruction has more to it than furnishing anonymous articles and the background difficulties are the hardest to solve.

Dr. A. B. Hirsh: That there should be united action on the part of the medical profession and of representative men of the press certainly appeals to those who have studied the efforts of our own county medical society's committees in what has been to us during the past year a relatively new field. Dr. Woods has our assurance that his suggestions have indeed fallen upon fertile ground.

"The Relation of the Tonsil, Adenoid and Hearing to Development in Children," was read by Dr. D. Braden Kyle. Tonsillar and adenoid tissues are physiological structures and their relation, as well as that of hearing, to the mental and physical development in children is of extreme importance. It is therefore apparent that the mechanical interferences with phonation, such as imbedded or enlarged tonsil, or the obstructive adendid, should be corrected early in life before habits are fixed. Extreme care should be taken in correcting these defects that the muscular structure of the soft palate and pharyngeal pillars are in no way injured and thereby prevent the formation of scar tissue, which in turn would involve the mechanism of phonation later in life. It is extremely important for the parent, the physician and the teacher to take into consideration these mechanical defects, and watch the process of the child through the formative period of development.

I do not wish to be understood as believing that all tonsils cause adverse conditions or that all tonsils should be removed, but I do wish to emphasize my conviction that adenoids and tonsils are in many instances the great enemies of perfect development of hearing and of speech. There are few children who suffer from impaired hearing who do not have this condition. There is no more fallacious and dangerous statement in the English language when applied to the ear, than that advice of letting the child alone to outgrow the cause, for we positively know that sooner or later it will be a menace, not only to his hearing but to his speech and general health. While a child's mentality may be normal more effort is required to attain development in the presence of obstructive adenoid structure than in its absence. In early childhood any obstruction to nasal breathing will affect the facial development and contour. This will affect the acoustics of the mouth and interfere with phonation and enunciation and alter the voice. The tonsil that is submerged is the one that nearly always is to blame for the infective processes in its region and in the neck and which proceed from the neck to the general system.

By careful attention to these conditions in childhood with removal of the causes the number of handicapped children will be materially lessened.

Dr. B. Alexander Randall, in discussing: I would express my almost complete agreement with all that Dr. Kyle has said. I will go one step further and state my conviction that obstructed nasal breathing is more often a cause of adenoid hypertrophy than a consequence. We must have a free nose if we are to have these conditions remain anywhere near the normal. Unilateral deafness is a very serious handicap to those who may have perfect hearing in the other ear. If all sounds are taken in from one ear there is not only a delay in comprehension, but an amount of actual confusion very little appreciated. Upon the anatomical side I feel strongly about the essential nature of a free nose. There are many instances in which the high vaulted palate with the narrow nasal chambers are in part hereditary. Children should be taught early to keep the nose free. By hot gargling much can be accomplished by a method so ridiculously simple that many will not use it. By keeping the parts in good working order in early life many of these disadvantages can be forestalled.

Dr. Francis R. Packard: In a discussion of the pathologic conditions of tonsils and adenoid vegetations in the nasopharynx as they bear on the development of the child, there should be a distinction drawn between the two conditions. In respect to the influence of adenoid vegetations, I think their presence is invariably harmful, especially (1) by their interference with respiration; (2) by the ear conditions, either suppurative or nonsuppurative to which they give rise; (3) as sources of infection by the presence in the adenoid of tubercle bacilli or other pathologic microörganisms. Meyer's classic report which appeared in English in the transactions of the Medico-Chirurgical Society of London for 1868, dwelt especially on the ear troubles arising from them, nearly two thirds of the 102 cases he had observed having aural disease as a result of the presence of vegetations. The tonsils, although sometimes an etiological factor in ear troubles and quite often a source of respiratory disorders, are now chiefly regarded as productive of harm by acting as portals of infection or autotoxemia, especially in what are grouped as rheumatic affections of the muscles, joints or heart, and of those general, slow toxic infections of which, heretofore, the source has been regarded as obscure.

YORK—November.

The York County Society met in the parlor of the Colonial Hotel, November 5, at 1 P.M. Dr. N. C. Wallace was elected president *pro tem*, and Vice President Brose presided during the latter part of the meeting. Dr. C. W. Frey of Dallastown, the Hon. A. B. Farquhar, and Dr. S. J. Immerman of York, were present as guests. Fifty-five members were in attendance.

Dr. Charles H. Frazier of Philadelphia addressed the society upon the "Surgery of the Hypophysis Cerebri." Despite the fact that the hypophysis has been the subject of extensive research during recent years, there are still many problems left unsolved, and many difficulties confront the surgeon in his attempts to deal intelligently with the various phases of pituitary disease. This is partly because of the inaccessible position of this small organ, situated as it is in the sella turcica and surrounded by such important structures as the cavernous sinus, the optic tracts and chiasm, and the internal carotid artery, and partly because it is composed of three parts, the pars anterior, the pars posterior, and the pars intermedia, which are anatomically and physiologically quite separate. Various theories have been expressed as to the functions of the gland since earliest times, but on account of the contradictory results of research workers, there is still great difference of opinion as to whether one or all of the component parts of the hypophysis are absolutely essential to life.

Another perplexing feature of the problem is the seeming lack of any definite etiologic relation between the clinical syndrome of pituitary disorders and the character of the lesion. In the presence of any one of the three pathological lesions, the benign, the malignant, and the strumous, we may have any one of the three clinical syndromes, the hyperpituitary, the hypopituitary, or the pressure syndrome, separately or in combination, so that it is impossible before the operation to determine anything of the character of the lesion with which we will have to deal. And on the other hand, signs of glandular derangement may occasionally be entirely lacking in the presence of a hyperplasia or a neoplasm, as have been illustrated in my own experience and that of others.

Further obstacles are met in an attempt to draw deductions based upon the type of tumor, because of the difficulty in determining its precise nature by histological examination. Thus, even with experienced pathologists, difference of opinion will be found as to whether a given tumor is an adenoma or a sarcoma, a benign adenoma or a malignant adenoma, an epithelial sarcoma or a carcinoma. Lesions of the hypophysis can scarcely be grouped with lesions of other parts of the brain. We are often dealing not with a neoplasm, but with a hyperplasia. And, moreover, despite the fact that many hypophysial tumors are classed as malignant, their life history shows that there is not the same distinction between benign and malignant lesions here as elsewhere, for frequently, there will be no signs whatsoever of recurrence or metastasis.

While much has been accomplished by the physiological research of the past few years, still finer analyses will be possible in the near future through careful clinical and pathological studies. We will very soon have to revise our ideas concerning the symptom complex of pituitary disease. In human pathology we are obliged to deal mostly with dyspituitarism, as there are few cases of pure hypo- or hyperpituitarism. The main features in the hypophysial syndromes are so well known that I will not dwell at length on them here, but merely emphasize certain points which have been strongly brought out in my recent cases. The symptoms are divided into three groups: First, those produced by pressure on neighboring structures, particularly the optic chiasm and nerves, and occasionally the cerebral peduncles. Pressure in the latter case is seldom sufficient to produce definite paretic phenomena, though the extensor reflex is found, and sometimes weakness in the legs and an unsteady gait. In the second group are the symptoms due to intracranial pressure, and in the third those due to interference with the function of the gland itself. In several cases which have been under my care recently, I (*Jour. A. M. A.*, Nov. 1, 1913, Vol. LXI.) have observed severe pains in the limbs. Whether these pains are due to irritation of the cerebral peduncles or are referred is still a matter of conjecture. Biedl mentions muscular pain as a symptom of acromegaly, and in a case reported by Stewart and Brewerton (Proceedings of the Royal Society of Medicine, 1913, Vol. VI., No. 7), the patient suffered from pain in the back of the neck, and Genella's patient (*New Orleans Med. and Surg. Jour.*, 1913, Vol. LXVI., No. 2) had persistent neuralgia in the right hand and foot. Acroparesthesia, that is, numbness and stiffness of the extremities, I have also found in several cases recently, and sometimes there is a distinct tingling sensation in the fingers. Instances have been noted in which the mental disturbances are the predominating feature. Taylor (*The Lancet*, Nov. 22, 1913) reported recently a case of a woman, aged forty years, with no symptoms other than apathy and general mental derangement. The autopsy revealed a spindle-celled sarcoma of the pituitary body.

Before taking up the discussion of operative intervention, permit me to speak for a few moments on the subject of glandular therapy. It is my practice to resort to glandular therapy at the outset, in all cases in which vision is not threatened, or when there are only the early signs of visual disturbance. In those cases in which perhaps the sight of one eye is entirely lost and that of the other seriously impaired, I advise immediate operation. It is a curious fact and one which shows a close interrelationship between the functions of the thyroid and pituitary glands, that thyroid extract seems to be quite as effective as pituitary extract. So that I begin with the thyroid extract and continue with it until it has proven unremedial or when the patient becomes intolerant to its administration. Under these circumstances the thyroid is discontinued altogether or given on alternate days in conjunction with pituitary extract. From a verbal communication from Dr. deSchweinitz I learned of a second case under his observation in which very much decided improvement was observed from glandular therapy.

Coming now to the operative treatment of pituitary lesions, we are confronted with a very complex and intricate subject. The complexity of the subject arises from the fact that it is absolutely impossible before the operation, to determine whether we are dealing with an extrasellar or an intrasellar lesion. The size and deformation of the sella turcica itself, is not as reliable a guide as we would be led to suppose. In fact, in some cases, with well-marked symptoms of dyspituitarism, there is no structural change in the sella whatsoever. Where there are clearly expressed extrapituitary lesions, the presumption may be made that we are dealing with an extrasellar lesion; either a large tumor of the pituitary itself, extending well beyond the confines of the sella turcica, or tumor originating in some extrapituitary structure with pressure on the gland itself. I will refer later to one case of tumor which took its origin from the optic nerve but gave only symptoms of a true hypophysial hyperplasia.

There are many limitations to hypophysial surgery, but the fact that seemingly malignant lesions run a relatively benign course, is an encouraging feature. I am still of the opinion that we are scarcely justified in resorting to surgical therapy solely for the purpose of arresting the acromegalic or dystrophic changes, unless they are combined with violent headache and ocular disturbances. But when the latter pressure symptoms are present, operation is not only justifiable, but absolutely indicated. In no case, should operation be postponed until the optic nerves have become atrophied.

Generally speaking there are several surgical measures to be considered; a temporal decompression, a sella decompression, a transphenoidal approach, or a transfrontal approach to the sella turcica with a partial or complete extirpation of the lesion. I can conceive of cases in which from the increase of intracranial tension, either as a result of the tumor itself, or because of an associated hydrocephalus, a temporal decompression would relieve some of the symptoms that are due alone to hypertension within the cranial chamber, chief among which are headache and vomiting. But as a matter of fact, in my hand, and so far as I can determine from the results of others, the operation has been singularly unsuccessful. In one instance, I began the treatment with a temporal decompression, merely to relieve an intolerable headache, but without appreciable effect. Quite obviously this operation will not arrest visual disturbances and ultimate blindness, and can not influence the symptoms that are due to disturbance of the pituitary function.

It must be remembered that we are in the developmental stage of pituitary surgery; we are feeling our way along cautiously and our opinions of to-day may not be those of to-morrow. A year ago, I was disposed to advocate the transfrontal approach to the sella turcica as the operation of choice in the majority of cases, and while I still believe this operation gives the best and only intelligent approach to extrasellar lesions, it is as I have already said almost impossible beforehand to determine the origin or extent of the lesion. When confronted to-day with a case of positive pituitary disorder, in which the visual symptoms are predominant, I recommend a sella decompression. This operation is attended with the least risk and by the relief of pressure, affords an immediate opportunity for the recovery of vision. Within a very short time, sometimes even a few hours, betterment of vision will be observed. This is distinctly conservative practice, I admit, but I question whether in the absence of symptoms which threaten life, we should launch forth on a too radical course. Furthermore, the comparative benignity of many of the so-called malignant tumors of the hypophysis and the fact that, in many instances, we are dealing with a hyperplasia and not a neoplasm, may be offered as a further argument in favor of conservative practice. With a larger experience in observing the naked eye appearance of pituitary lesions *in situ*, we may be able to make a differential diagnosis between new growths and hyper- or hypoplasia, but thus far this has not been possible with any degree of certainty, although we are beginning to become familiar with the strawberry-like appearance, and with a granular vascular surface of the true hyperplasias.

By resorting first to the transphenoidal approach and a sella decompression, we leave as a possible secondary attack, the transfrontal approach. The technic of the endonasal approach to the sella turcica has become a comparatively simple procedure. While we used to perform it in two sittings, we now do it in one; while we used to resort to a general anesthetic, we now complete the operation under local anesthesia. The operation consists essentially in the submucous resection of the septum, in the removal of the wall of the sphenoidal sinus, and the floor of the sella turcica; in fact, once the septum is resected, the major portion of the operation is completed.

Following the lecture, Dr. Frazier had thrown upon the screen a large series of excellent photographs illustrating the various phases of hypopituitarism and hyperpituitarism, illustrating the most conspicuous features which made up the clinical symptomatology. He also illustrated the *x*-ray features of the sella by a large number of slides, thereby demonstrating the most important means by which a diagnosis can be made. The final pictures dwelt in detail with the historical phase of the surgical treatment and led up to the various steps in the two most commonly performed operations of to-day, *viz.*, the transphenoidal and the transfrontal. By a unanimous vote of the society, he was given a rising vote of thanks and elected to honorary membership.

Resolutions were unanimously adopted endorsing and commending the efforts of the Pennsylvania Child Labor Association to limit the hours of labor of all children under sixteen years of age. A communication from the Pennsylvania Society for the Protection of Scientific Research was referred to the Committee on Health and Public Instruction. A consideration of the new "model" constitution and by-laws was begun, and its completion was ordered at an adjourned meeting to be held November 12, at 8 P.M. Julius H. Comroe, Reporter.

POISONING BY BORIC ACID DRESSING.

While wet boric acid dressings are harmless, this is not true of dry, powdered or crystallized, boric acid. Alarming symptoms resulted from the application of dry boric acid to wounds caused by a burn. *Jour. A. M. A.*, Aug. 15, 1914, p. 593.

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ORIGINAL ARTICLES.

BORDERLAND TOPICS IN OPHTHALMOLOGY AND OTOLARYNGOLOGY.

BY JOSEPH C. BECK, M.D.,
Chicago, Ill.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The time has arrived when specialism is an accepted fact in all professions and the "Jack of all trades" can be considered a saying of the past. It can unhesitatingly be said that specialism has made great strides in medicine, and is considered by many as overdone. The general practitioner of former years is practically unheard of in large communities and only possible in sparingly populated districts. Furthermore while the general surgeon is still considered the shining light surgery is also being rapidly subdivided into the various surgical branches. This can be very easily demonstrated by examining the various curricula of the leading universities, as well as the transactions of the associations of pedagogy. So for instance the chair of surgery with one head of the department has as its associations, sub-heads, in the various surgical departments, as ophthalmology, otolaryngology, orthopedic surgery, gynecology and obstetrics, and genito-urinary surgery. The same is true in the subject of medicine, in that general medicine is subdivided into neurology, pediatrics, dermatology, etc. The various laboratory methods employed in diagnosis and treatment are again subdivided, some belonging to both the divisions as for instance, radiology. This at once shows the absolute necessity of border-line divisions, where one branch will merge into the other. Further subdivisions are made in the subject of surgery, as for instance, oral surgery, neural surgery, etc.; and then within these, special surgical accomplishments are sought, as for instance, surgery of the special organs, such as thyroid gland, the stomach, etc. It is the purpose of the writer to discuss this question of border-line surgery which comes within the confines of the ophthalmologist and otolaryngologist desiring to show the needs of having a broad knowledge of the subject of general medicine and surgery, and versatile in the means of diagnosis of conditions which are intimately associated with diseases of the eye, ear, nose and throat, and to further prove the indispensable association or team work between various specialists and specialties.

By way of illustration: A patient having symptoms of sinus disease and at the same time is having considerable difficulty with his teeth. It is very essential in such a case to be associated with a dentist. Another patient will have symptoms of intracranial involvement following sinus disease and other nervous manifestations not well enough accounted for by this involvement from the sinuses. In such a case a neurologist will have to be consulted. And with another patient who has symptoms of a chronic focal infection and the particular focus is not clearly in evidence, a general diagnostician or internist with all the laboratory facilities will have to be called in.

Where then is the limitation of the ophthalmologist and otolaryngologist in his specialty?

The writer has expressed his views on the subject a number of times, and in a Chairman's Address before the American Academy of Ophthalmology and Otolaryngology several years ago he presented the reason for them. He has adhered to these principles and is very glad to see that a number of the gentlemen, who at that time voiced their disapproval very strongly against these views, have since then adopted them. He has also noted that abroad as well as in this country the tendency is in the direction as then expressed.

Briefly speaking those views were about as follows: (1) That an ophthalmologist as well as an otolaryngologist is intimately associated and must either be prepared to treat these four branches or have an associate who will treat one or the other of these two specialties. It is the latter arrangement that the writer employs. In this connection I would like to call attention to a recent paper presented before the American Laryngological Association by Dr. Barnhill, on "Environmental Surgery in Otolaryngology," in which he lamented the conditions existing in that men operated that had absolutely no ability even though they had a good training. He recommended the division of the work in the two classes, those that have natural tendency and ability to operate and those that have not. These latter men are excellent in the nonsurgical measures and many a patient that often is now operated on would be cured without operation by this expert in treatment. I am absolutely in accord with these views. (2) That ophthalmology and otolaryngology can not be considered complete without taking into account the management of the adnexa, as for instance structures within the mouth, face, neck and brain.

It will be seen at a glance that an ophthalmologist and otolaryngologist is really a head and neck specialist and that is precisely what the writer believes. He may not be an expert in the entire domain, in the diseases of the head and neck but he should at least be prepared to recognize the conditions which are intimately associated with the diseases of the eye, ear, nose and throat. I am of the opinion that certain "hobbies" will thus be established by the different men.

Permit me now to call attention to some of these special borderland subjects or hobbies in which I have been interested in myself and give my personal results in each condition, necessarily very brief however.

PLASTIC AND ORAL SURGERY.

In considering the plastic operations about the head and neck we may specifically mention nasal deformities, cleft palate and harelip and cheeks, external ear deformities, muscle and nerve plastics. Plastic about the eyelids and eyeball. Plastic of the larynx, trachea, pharynx and upper portion of the esophagus. In order not to take up your valuable time now I will present stereoscopic photographs of some cases that have come under my personal observation, of the conditions mentioned above. They are self-explanatory. (Illustrates photographs.)

Most of these patients consult in the first place the ophthalmologist and otolaryngologist, yet in looking over the reports in the literature the writer finds that the surgery was performed by general surgeons. Why? I will leave this question for you to decide.

In regard to oral surgery of which the harelip and cleft palate are an important part, they have been treated principally by the general surgeon and oral surgeons, yet it is very clear that the special functions of breathing, speaking and deglutition are materially influenced by the operation and after treatment. It has been my practice to operate on cleft palate and harelip just as early in life as possible, yet I always consider the general condition of the patient. A poorly nourished infant is better left alone until it is strong enough to stand the ordeal. Most of my cases required more that one operation. I employ any and all the accepted methods but am very partial to the Lane and Brophy methods. The method for each individual case should be selected. Absolute rest for the first two days has proven to be the most important factor in my practice and rectal feeding is very valuable. In infants the use of the dropper for feeding is excellent practice.

SECONDARY INVOLVEMENT OF THE NECK FOLLOWING MALIGNANT DISEASE OF THE NOSE, THROAT AND EAR.

This is such a vast and important subject that not a paper but a book could easily be written, yet I must satisfy myself to just mention the most salient points.

The diagnosis of carcinoma and sarcoma is comparatively easy from the microscopical examination and the treatment is the most discouraging chapter in the practice of medicine. Particularly is this true of carcinoma. If however, one is so fortunate as to see a malignant growth (carcinoma) early, then a thorough operation removing the primary seat of the disease as well as all the tributary lymphatic glands in the neck, offer some hope of a cure. The larger number of such cases that have come under my observation have either progressed too far for any such a radical measure to have been entertained, or the primary seat of disease was removed thoroughly enough, but the glands in the neck were not simply because they were not large at the time. I would like to call your attention to the wonderful record of St. Mary's Clinic of Rochester, Minn., in carcinoma of the lower lip where routinely the submaxillary and submental glands are removed *en masse*.

In regard to sarcoma it is well known that the prognosis is very much more favorable, since the thorough removal of the primary seat of the disease will be sufficient to establish a cure, simply because the glands are very seldom or not at all affected.

In this connection I would like to speak about the employment of radium, as well as deep penetrating x-ray therapy in malignant disease. Of the cases of superficial carcinoma or epithelioma of the nose, throat and ear, including the mouth, it has been my fortune to have cured practically every one of seventeen cases, although in some there were recurrences, but they were immediately subjected to further and more vigorous application by these remedies and finally good results were obtained. In deeper seated malignant disease particularly carcinoma my results were absolutely negative as to cure. But some very interesting scientific observations were made, especially in carcinoma of the larynx. One patient in particular, who was subjected to large doses and prolonged applications of radium, died four years after the first microscopical examination was made, without any metastases any where in the body, as shown by post-mortem examination. In fact the specimen of the larynx and esophagus removed postmortem shows the remaining carcinomatous cells crenated and deficient in the nuclear substance. The patient had symptoms of unusual character and are probably those described by some of the European authors as toxic from the excessive treatment of radium. In regard to the deep penetration treatment by x-ray, we have followed the technic of Kroenig and Gauss and I feel sure that just as good a result can be obtained by this method of treatment as by radium.

INTRACRANIAL COMPLICATIONS FROM NOSE, THROAT AND EAR AFFECTIONS.

I desire to confine my remarks to those intracranial complications resulting from suppuration of these primary infected structures, and not dwell upon the subjects of neoplasms, trauma, etc. The most important part of this subject has to do with the diagnosis and I believe that in no department of medicine has there been such progress as in ophthalmology and otolaryngology in reference to the intracranial complications. The work of the Vienna School in regard to the diagnoses and treatment of the labyrinth and brain by Barany, Neumann, Ruttin and others, the splendid work by Mygind, Menasse, Breger and others on spinal puncture for diagnostic therapeutic purposes, of Kopetsky, Haines and Day on diagnosis and surgical treatment of meningitis and finally, Balance, Jones and McKernon on sinus thrombosis marks the grand epoch in this line of work. The literature is teeming with reports of cases by otolaryngologists and ophthalmologists; unfortunately in the majority of instances the results were fatal in the severer forms of intracranial complications, yet there is no doubt, in comparing the statistics when this work was solely done by general surgeons, that the mortality rate was very much greater than when managed by the otolaryngologist. In the face of all this the writer has studied the article recently published by Professor Starr in which the statement appears very clearly that there is no reason why an otologist or rhinologist should ever attempt to operate within the cranial cavity, simply because in the majority of the cases that he has seen, that were thus operated upon, calling attention to brain abscess in particular, he has found insufficient drainage, and the fatalities due to this cause. I wish to answer this statement by calling attention to the statistics which will demonstrate very easily, between cases operated on within the cranial cavity by competent otological and rhinological surgeons, and those by general surgeons. I wish to emphasize the phrase "competent otological and rhinological surgeons." In a recent article that I published, entitled "Failures and Successes in Intra-Cranial Surgery," in which I gave my statistics in the past fifteen years on the above-mentioned subject, I have had an occasion to go into the literature quite fully and can unhesitatingly say, that this borderland subject of brain surgery and otolaryngology must certainly be accredited as to belonging to the domain of the latter.

HYPOPHYSIS.

There is probably no field in medicine in which there is so much speculation at the present time, as there is in the domain of the glands of the internal secretions, of which the hypophysis is one, and yet so much positive physiological laboratory work has been accomplished as to make one think that probably some day these glands of internal secretion will play a most important part in the diagnosis and treatment of disease. The hypophysis has been under consideration for a good many years since Pierre, Marie and Sir Victor Horsely called attention to the disorders of this structure, the acromegaly being one of the most important results, and it has been found that it was usually a tumor, either an adenoma, sarcoma or cyst of the anterior lobe, which was responsible for this change in the growth of the body. Froelich has shown the opposite, namely a stunted growth with overdevelopment of adiposity. The hypophysis is made up of two distinct portions with an intermediary portion separating them, the anterior glandular and the posterior cerebral portions. Both may be involved in the pathological process at the same time. The close relationship of this gland, when enlarged, to the optic nerve shows its importance to the ophthalmologist since the loss of vision of the temporal side of the retina, especially if on both sides (bitemporal hemianopsia), is the first symptom that a patient may complain of. And the headache with the corresponding loss of vision is the other important symptom which may appear long before any of the changes in the growth become manifest.

The rhinologist is very little concerned in this disease except that it has been found that the best route to reach the hypophyseal gland is by way of the nose. I desire to mention the various methods that are in vogue in the operation for the relief of pressure from the changes in the gland and in conclusion present my own method which I first developed on the cadaver and subsequently operated on two patients, with success.

Cranial route: (1) Krause's temporal osteoplastic flap; (2) Killian's frontal osteoplastic flap; (3) Cushing's subtemporal zygomatic flap.

Cranio-orbital route: (1) McArthur's method; (2) Frazier's method.

Transnasal and sinus route: (1) Kanaval's method; (2) Hirsh's method; (3) West's method; (4) Citelle's method; (5) Chiari's method; (6) Trepoff's method; (7) Cushing's method; (3) Halsted's (Lowe) method; (9) Writer's method.

Transoropharyngeal route: (1) Hoffmann and Katz' method; (2) Preusing's method.

While doing this work and from the experience in the work on the sinuses (nasal accessory), the writer noted the ease with which one could reach the sella turcica by way of the antrum, posterior ethmoidal cells and sphenoid sinus route. This route to reach the sphenoid sinus was first suggested and practiced by Jansen, and, while taken up enthusiastically by several rhinologists, yet it has never become very popular for the opening the sphenoid in sinus disease. It has however, always appeared to the writer that the method offered a good exposure and more direct inspection of the sinus than the transnasal method. The same is true of the exposure of the sella turcica than by any transnasal route. It is, furthermore a much shorter distance than through the anterior nares. While there is no doubt that the Hirsh latest method which requires the removal of the nasal septum submucously and then enter the sphenoid and so open the sella is by far the best route yet suggested and the number of cases thus far operated upon have proven most successful, the writer believes that the method he suggests has a number of advantages and is feasible in practice as shown by the two cases successfully operated upon.

OPERATION.

1. Incision is made above the gingival margin about one fourth of an inch in the soft tissue of the upper lip, beginning in the median line above the second central incisor and carried externally to the first molar.

2. The soft tissues are severed and the anterior surface of the superior maxilla exposed in the same manner as when opening the antrum.

3. Elevation of all the tissues as far as the inferior orbital margin and laterally to the zygomatic fossa.

4. Retractors pull upward and forwards (mouth closed) so as to expose the entire anterior surface of the antrum.

5. By means of an electric burr or biting forceps the entire anterior surface of the superior maxilla is taken off. The intraorbital nerve is not injured in the procedure.

6. The middle turbinate is now removed and nose packed with gauze.

7. The posterior ethmoidal region through the antrum is now opened by means of curet and nasal punch forceps and the posterior ethmoidal cells are curetted until the gauze packing is reached.

8. The antrum is now packed to prevent the accumulation of blood.

9. The nasal packing is removed and a probe inserted into the sphenoid sinus as a guide.

10. Remove the gauze from the antrum and remove the anterior wall of the sphenoid by the usual manner of curets and punches. The septum between the two sphenoid sinusesshould also be removed.

11. By means of Hirsh's beveled chisel three incisions are made into the floor of the sella turcica and this little piece of bone lifted off by the same chisel and removed by breaking it off from its attachment.

12. By means of the two angular spatulas of Hirsh's small particles of the thinned out floor of the sella turcica are removed and the opening further enlarged by sphenoid punches.

13. The dura is now excised with Hirsh's bistoury and any desired incision made to enlarge the opening by the same instrument. If the growth is a cyst then that will probably terminate the operative procedure, but if it be a tumor then the same or part of it is removed by punches and curets.

14. A cigarette drain is placed into the sella turcica and led through the antrum. The remaining portion of the incision in the mouth is closed by two or three stitches. (Figures 1, 2, 3, 4.)

NECK SURGERY.

The most important subjects to consider in this line are the thyroid gland, tuberculous glands of the neck, diseases of the salivary glands, carcinoma of the larynx, and branchial cysts.

THYROID GLAND.

The ophthalmologist is most frequently the first to be consulted in the disease of the thyroid gland when it is the subject of hyperthyroidism, either from the appearance of the eyes (exophthalmos) or the common symptom of headache over the eyes. It is the recognition of the fact that the thyroid gland is diseased and yet not at all large, that is important in the treatment of this affection. It has been furthermore shown by laryngologists (Shurley, Theisen and others) as well as those that pay special attention to the thyroid gland (Beebe) that pathological conditions of the nose and throat, particularly tonsils, are frequently found in connection with hyperthyroidism, but not many have laid claim that the removal of such pathological conditions of the nose and throat has cured cases of hyperthyroidism. The removal of the thyroid has however, when the patient is in condition to be operated upon, given the best results.

The large or parenchymatous, cystic, colloid goiter is of particular interest to the laryngologist in so far as it involves the recurrent laryngeal nerve and so produces paresis or paralysis of the muscles of the larynx or compresses the larynx and trachea to the extent of causing constriction and so obstruct breathing, or by pressure on the esophagus, especially of the posterior lobe, so cause great difficulty in swallowing. Since this symptomatology usually brings the patient to the laryngologist it is he who has the management of this condition. It has been my privilege to have observed, treated and operated upon a fair number of all varieties of thyroid gland diseases and would say that it is one of the most satisfactory parts of the borderland condition to treat. The technic is easy and the results are as a rule excellent. The recurrent laryngeal paresis that so frequently results from operation due to the inflammatory reaction is usually transitory.

TUBERCULOSIS OF THE GLANDS OF THE NECK.

In regard to the tuberculosis of the glands of the neck the writer would repeat what has already been said on the subject of carcinoma, that it is the primary focus of infection that requires the greatest of attention. This primary focus is usually situated within the mouth and throat, although nasal conditions are frequently responsible for the same. The tonsils are looked upon to-day as the greatest source of infection of glands of the neck, and while they, the tonsils, are not very frequently found tuberculous it is due to their diseased condition that the tubercle bacillus finds easy passage through them and lodging within the regional lymphatic glands. Recognizing this fact the management of tuberculous glands of the neck has taken a marked change. Instead of the radical excision of all the glands of the neck, and often to be repeated two or three times, it is the practice now to remove the primary focus of infection, the tonsils, etc., and wait for the possible resolution of the enlarged glands by additional proper systemic and local treatment, and if after that they have a tendency to break down or do not

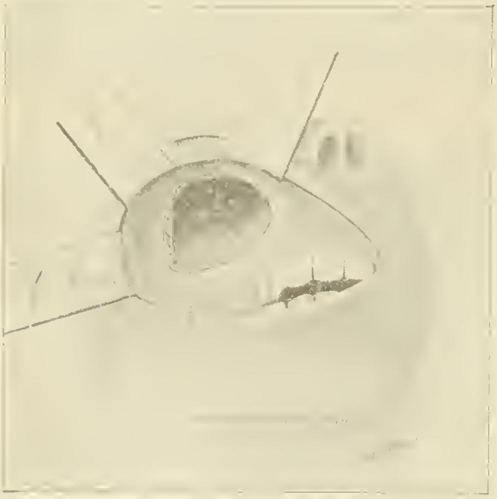
Figure 1, Step 1.

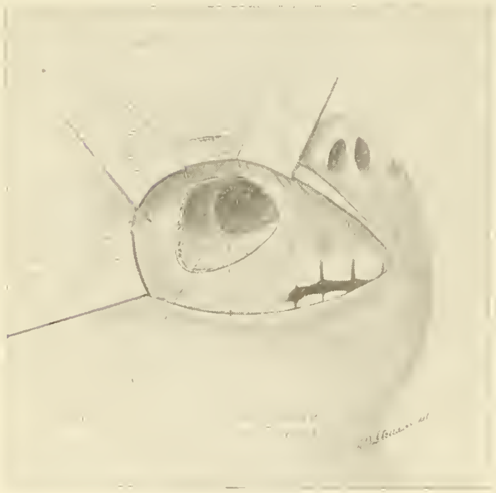
Figure 2, Step 2.

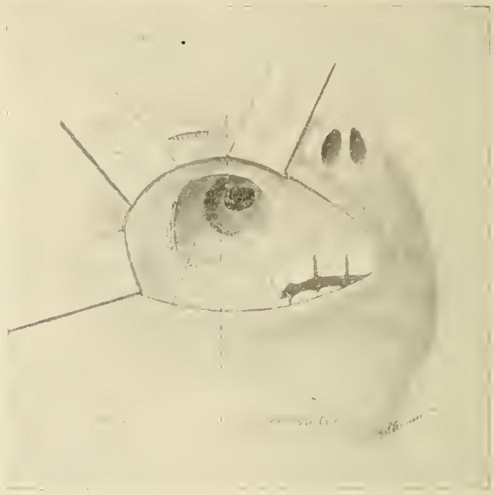
Figure 3, Step 3.

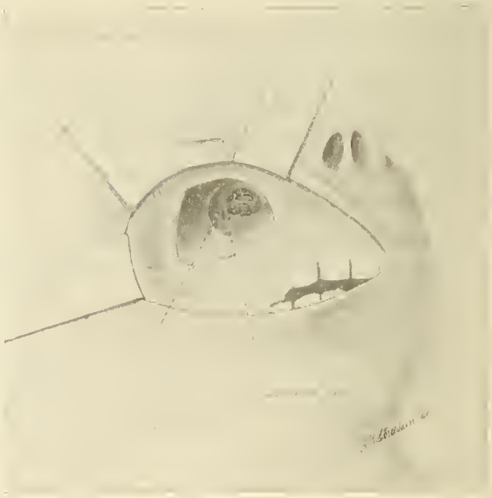
Figure 4, Step 3.

disappear they are then operated upon. It has been my routine practice in the past ten years to do this, and only in very few cases, when the glands were truly infected with tubercle bacilli, especially when caseations had already taken place, was it necessary to operate externally; however, never doing the radical operation as before. I wish to call attention to two therapeutic measures employed in the treatment of tuberculous glands of the neck, aside from surgical intervention, which have given me excellent results, namely, *x*-ray and sunlight exposures combined, and the subcutaneous injection of iodipin (iodin oil).

SALIVARY GLANDS.

The diseases of the salivary glands are comparatively rare, aside from those of the infective type, as mumps, and the most frequent condition met with are obstructions within the duct producing cysts and abscesses. The definite swelling and tenderness over the particular gland is pathognomonic in the diagnosis and the most important fact to remember in the treatment is the establishment of free drainage through the various ducts, just as soon as possible. Not infrequently are calculi the cause of such obstructions and the radiogram will never leave one in the lurch in the diagnosis of such a condition. The greatest difficulty that I have experienced was the surgical treatment of fistula of these glands following neglected abscess or infected cysts, especially those of the parotid owing to the location of the facial nerve within it.

CARCINOMA OF THE LARYNX.

Most of the members present are quite familiar with the diagnosis of carcinoma of the larynx, so it will not be necessary to go into that part of the subject, but I will simply confine myself to the discussion of the surgical intervention, for that alone offers a possible cure.

When one reads the reports of two such men Sir Felix Semon and Sir St. Clair-Thompson as well as the last discussion on this subject before the American Laryngological Congress in Washington, one would naturally adopt the proposition of laryngeal fissure with the thorough removal of the growth. Yet my personal experience with this method in a fairly good number of cases has not been very favorable, and I voice the expression of many experienced laryngologists. In opposition to this above-mentioned favorable report on laryngeal fissure, I wish to call attention to the splendid statistics of Gluck and Crile in doing a primary laryngectomy for this trouble, and in addition will say that, while my personal experience with laryngectomy has also been most discouraging, yet out of fourteen patients so operated on, two are living, eight and five years since operation. I am therefore disposed to look upon this method of procedure when a positive diagnosis has been made with greater favor than laryngeal fissure, and only would do the latter if not permitted to do the former, more radical means.

BRANCHIAL AND OTHER CYSTS.

Cysts of the ventricle of the larynx such as recently reported by Shambaugh, esophageal pouches or diverticula and branchial cysts are some of the rarer conditions met with and frequently require external operations as well as the work per orem. I have recently operated upon a diverticulum of the esophagus by means of the suspension method of laryngoscopy according to Killian that demonstrated the superiority of this method.

DISCUSSION.

DR. L. LEO DOANE, Butler: Referring to the connection between disease of the tonsil and hyperthyroidism, which Dr. Beck mentioned, I wish to speak of a case which has been under my observation for a number of years. This person, a young woman, has been greatly subject to sore throat in general and to tonsillitis. Tonsils are large and ragged; she has persistently refused to have them excised. Recently she has had a severe attack of tonsillitis and has since complained of a "lump" in the throat in the front median line. Tonsils are large and inflamed. The thyroid gland, which has been slightly enlarged for a number of years, has become considerably larger and seems to be pressing on the larynx and upper trachea. This condition following so soon after tonsillitis was striking, and I have wondered if it were unusual.

DR. JOHN F. CULP, Harrisburg: I wish to ask if Dr. Beck will please amplify his remarks concerning iodin injections in treatment of tubercular glands, especially cervical, in children. Most of us are familiar with the various hygienic and dietetic methods of treatment, including the exposure of the whole body to the sunlight. We find, however, that the parents of such children with tuberculosis of glands are much better satisfied if in addition we administer drugs. The administration of iodin by mouth and inunctions is unsatisfactory and any treatment, such as the injections mentioned, that will increase our confidence in their ultimate cure will be of distinct value.

DR. BECK, closing: Regarding Dr. Doane's remarks, while there is no definite communication known between the tonsil and the thyroid, confirmatory literature in regard to the possibility of such an association is sufficiently at hand to warrant that there must be something in it. Dr. Rogers of New York, Dr. Shurley of Detroit, and many others have published articles on this subject and my personal observation leads me to believe in the distinct infection from the tonsil influences and has a deleterious effect on the thyroid gland, especially if it be a subject of hyperthyroidism.

In answer to Dr. Culp, I would say that nothing has ever given me as much satisfaction in medicinal treatments in regard to tubercular glands of the neck as the injection of the oily solution of iodin. We employ a solution prepared by Merck Company called iodipin, which is a solution of iodin in oil. This we employ from 10 mm. to 30 mm., two or three times a week, injecting it into the back between the scapulæ, continuing its use until the glands have disappeared.

ANTITYPHOID VACCINATION.

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(Read in the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914, and published with the permission of the Surgeon General, U. S. Army.)

It is unnecessary for me to go into the history of antityphoid vaccination, and the time at our disposal would not permit me to do so; and the subject has become so broad that it would be impossible to cover it in a short time. In the United States Army, antityphoid vaccination is compulsory, and we have collected and tabulated results of vaccination of a large number of men over a considerable time; so, here we can gain all the information that we need for the purposes of the discussion to-day.

Our diagnoses are carefully made by all of the present-day laboratory methods; all men are vaccinated, so our statistics are based on the entire army under all conditions.

So, I propose to say something about our vaccine and the results we have obtained in the army, to refer to some of the results in civil life; and then to take up some of the problems that still remain, some of the practical questions that we must answer, and to say a few words regarding the application of antityphoid vaccination in civil life.

A. THE VACCINE.

1. *Strain of the Bacillus Used.* We are using a single strain of the typhoid bacillus, the same strain that is used in the English Army vaccine. This strain was isolated from the spleen of a patient at Netley in 1900, and it is low in virulence—one whole agar culture given intraperitoneally does not kill a guinea pig: but it is pathogenic. Captain Nichols injected six rabbits intravenously with this strain with negative results; but, of two rabbits injected directly into the gall bladder, one became a "carrier" with typical lesions in the gall bladder, and a pure culture of the typhoid bacillus was recovered from these lesions. But this strain was not chosen because of its avirulence, or with the idea that reactions would be slight from its use. It was chosen because tests have shown that it produces a large amount of antibodies; and it has the advantage that it gives an even emulsion when grown on agar. It seems that virulence alone is not the important factor in the production of high and lasting immunity.

2. *Preparation of the Vaccine.*

a. Culture medium: We use agar, as we consider that contaminations are more easily detected and that no peptone or other extraneous substances are injected.

b. Killing: The growth is washed off with normal salt solution and the emulsion is heated for one hour at 53°-54° C.

c. Standardization: The vaccine is standardized by mixing equal volumes of the emulsion and blood, and counting the bacteria and the red cells in enough fields so that at least 500 red cells are counted. A simple mathematical calculation gives us the number of bacteria in a cubic centimeter of the emulsion; and the emulsion is then diluted with salt solution so that one cubic centimeter will contain

1000 million bacilli. At the time of this dilution, we add enough tricresol to make one fourth of one per cent. strength.

d. Tests: The vaccine is tested by plating aërobically and anaërobically, and by animal inoculations, for antibodies production, presence of extraneous organisms, and for excess of tricresol.

e. Keeping properties: Tests have shown that the vaccine loses little if any of its immunizing power in one or even two years; but to be on the safe side we do not use any vaccine that is over four months old.

3. *Dosage.* We give three doses at intervals of seven to ten days. The first dose is 500 million bacilli, and the second and third doses are 1000 million bacilli. Children receive a dose in proportion to their weight. Leishman and his coworkers tried out various doses on human beings and adopted doses of 500 million and 1000 million as being sufficient to produce an abundance of immune bodies and rarely causing severe reactions. The English give only two doses.

4. *Administration; Reactions.* Our directions are for a subcutaneous injection; and we never administer the prophylactic to any but the healthy. The local reaction consists of slight redness and tenderness at the sight of injection. At times there is a general reaction. For about 130,000 injections, careful records were kept of all general reactions; in over ninety-seven per cent. of persons the general reaction was mild (temperature below 100°) or absent; severe reactions (temperature above 103°) occurred in only one to three persons per thousand. We have sent out almost 1400 liters, to the army, navy, national guard, and others; enough to vaccinate over 500,000 persons—and practically all of it has been used, and there has not been a single fatality or serious complication.

Our usual procedure is to vaccinate against smallpox and typhoid fever at the same time.

B. THE RESULTS OF ANTITYPHOID VACCINATION IN THE UNITED STATES ARMY.

We began antityphoid vaccination early in 1909, and by the end of that year, 1887 persons had volunteered and had been vaccinated; and during 1910, 16,073 additional volunteered and were vaccinated. Voluntary vaccination continued in 1911, until in March of that year, on the occasion of the mobilization of a maneuver division in Texas, vaccination was made compulsory for every person in the division not already protected by an authenticated attack of typhoid fever or by recent vaccination. The camp at San Antonio was the largest; almost 13,000 men were located there, for a period of four months, with two cases of typhoid fever and no deaths from the disease. The camp at Jacksonville, Florida, in 1898, had almost 11,000 men, and the camp lasted approximately as long as the one at San Antonio. But there we had 1729 certain cases of typhoid fever with 964 probable cases, or 2693 certain and probable cases of typhoid, with 248 deaths from typhoid. A comparison of these two camps shows the combined effects of vaccination and sanitation.

In June, 1911, antityphoid vaccination was made compulsory for all recruits; and, in September, 1911, antityphoid vaccination was made compulsory for all persons in the service, under forty-five years of age. This order was not fully carried out in the United States before January 1, 1912; and in the Philippine Islands, it was not fully carried out until early in 1913.

And now, we can best show by a table, what our results have been.

TABLE 1. TYPHOID FEVER, 1901-1913, FOR THE WHOLE ARMY AT HOME AND ABROAD, OFFICERS AND ENLISTED MEN.

		Cases.		Deaths.				
Year.	Mean Strength.	Number of	Ratios per 1000 of mean strength.	Number of	Ratios per 1000 of mean strength.	Percentage of total cases.	Cases.*	Deaths.*
1901	81,885	552	6.74	74	.88	13.0%		
1902	80,778	565	6.99	69	.85	12.2%		
1903	67,643	348	5.14	30	.44	8.6%		
1904	67,311	293	4.35	23	.33	7.8%		
1905	65,688	206	3.14	20	.30	9.7%		
1906	65,159	373	5.72	18	.27	4.8%		
1907	62,523	237	3.79	19	.30	8.0%		
1908	74,692	239	3.20	24	.31	10.0%		
1909	84,077	282	3.35	22	.26	7.8%	1	0
1910	81,434	198	2.13	14	.17	7.1%	7	0
1911	82,802	70	.85	8	10	11.4%	11	1
1912	88,478	27	.31	4	.044	14.8%	8	0
1913	90,752	4	.044	0	0	.0%	2	0

*Occurring among those who were vaccinated.

We see a sudden drop in morbidity and mortality from typhoid fever, beginning with 1911, when we began antityphoid vaccination, until now, we seem to have it down to an irreducible minimum. I say an irreducible minimum; for we know that an attack of typhoid fever confers from ninety-five to ninety-nine per cent. of immunity; so, absolute disappearance of the disease is hardly to be expected.

During all of this time we have had troops in camp in Texas and in Vera Cruz. The men have not been confined to camp; and the disease has been prevalent around them. In some cases the disease has existed in the families of the men without the men contracting it.

The typhoid death rate in 51 cities in the United States (over 21,000,000 inhabitants) for 1912 was 12.72 per 100,000; for 1913 was 12.70 per 100,000. The typhoid death rate for the registration area in 1912 was 16.5 per 100,000. The typhoid death rate in the army, among the vaccinated, for the same year was 0, and again in 1913.

TABLE II. TYPHOID DEATH RATES PER 100,000 POPULATION.

Year.	Army U. S. Proper.	Civil Life U. S. Census.
1903	28.0	34.1
1904	27.0	31.7
1905	30.0	27.8
1906	28.0	31.3
1907	19.0	29.5
1908	23.0	24.3
1909	28.0	21.1
1910	16.0	23.5
1911	11.0	21.0
1912	4.4**	16.5
1913	0.0	?

**This death rate was among the unvaccinated. See Table I.

We do not consider that antityphoid vaccination has been the only factor in the reduction of typhoid fever; improved sanitation has been an important factor, and one of the important items in this improved sanitation we owe to a medical officer of the Pennsylvania National Guard; but the greatest care in sanitation and hygiene did not appear to be successful in reducing the number of cases much below 150 per annum in the United States for the present strength of the army. The point is well illustrated by our typhoid rate for 1911. In about 30,000 vaccinated, we had eleven cases of typhoid fever; in about 50,000 unvaccinated, we had fifty-nine cases of typhoid fever. Of course, sanitation was the same for all, except that a large part of the vaccinated were sometime in camp where danger from typhoid is increased. In 1913, we had two cases of typhoid fever actually developed in the army; so, we see the marked effect of antityphoid vaccination. The results in the United States Navy have been practically the same as in the army.

The question has been asked why antityphoid vaccination does not protect against typhoid fever as well as smallpox vaccination protects against smallpox. A glance at Table III. seems to give a definite answer, that it does.

TABLE III. COMPARISON OF SMALLPOX AND TYPHOID VACCINATION, ENTIRE ARMY, OFFICERS AND ENLISTED MEN.

	Smallpox.			Typhoid.		
Year.	No. Vaccinated.	Cases.	Deaths.	No. Vaccinated.	Cases.	Deaths.
1909	74,692	7	0	830	1	0
1910	18,434	17	1	16,093	7	0
1911	82,802	20	0	30,000?	11	1
1912	88,478	9	0	88,478	8	0
1913	90,752	15	3	90,752	2	0
		68	4		29	1

C. ANTITYPHOID VACCINATION IN HOSPITALS, ASYLUMS, CAMPS, TOWNS IN THE MIDST OF EPIDEMICS.

1. *Hospitals.* Spooner[1] reports for hospitals in Massachusetts, 1361 nurses vaccinated, with 2 cases of typhoid; and 674 nurses not vaccinated, with 8 cases of typhoid. Hachtel and Stoner[2] report, for hospitals in Baltimore, 309 nurses vaccinated, with no typhoid; 82 nurses not vaccinated, with 7 cases of typhoid.

2. *Asylums.* Cullinan,[3] in 1901, vaccinated 500 persons at the Richmond Asylum, Dublin, during an epidemic of typhoid fever lasting five months. Among the 500 vaccinated, only 1.36 per cent. contracted the disease, and nearly all of these were in the incubation stage when inoculated; on the other hand, of the 114 uninoculated nurses, 14.9 per cent. became infected.

Hachtel and Stoner report for an asylum in Baltimore, 887 inmates vaccinated, with no typhoid, 333 inmates not vaccinated, with 3 cases of typhoid.

3. *Camps.* Comparison of the United States Army camps at Jacksonville in 1898 and at San Antonio in 1911 is sufficient. Jacksonville with 11,000 men, over 1700 cases of typhoid and 248 deaths from typhoid. San Antonio with 13,000 men, 2 cases of typhoid and no deaths from typhoid.

4. *Towns in the Midst of Epidemics.* Spooner[4] reports a village of 200 persons: The water supply became contaminated and 65 persons were exposed to infection. Seventeen cases of typhoid appeared simultaneously.

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[1] *Jour. A. M. A.*, 1912. LIX., p. 1359.
[2] *Jour. A. M. A.*, 1912. LIX., p. 1364.
[3] *British Med. Jour.*, Oct. 26, 1901, p. 1226.
[4] Trans. Assoc. Amer. Phys., 1912, XXVII., p. 343.

Within a week, 29 of the remaining 48 persons were vaccinated; 19 remained unvaccinated. Among the 19 unvaccinated, 5 cases of typhoid fever developed; among the 49 vaccinated, 1 case developed, and this case presented symptoms immediately following the first dose of vaccine, showing that he was in the incubation stage at the time of the vaccination.

One point here: We must always bear in mind, when vaccinating an exposed person, that he may already be in the incubation stage.

D. PROBLEMS REMAINING.

I put these points down as "problems" as I feel that they are not yet settled.

1. *Vaccines.*

a. Polyvalent: The vaccine used in the English Army and in the United States Army is a monovalent vaccine made from the same strain of the typhoid bacillus. The English Army uses its vaccine in England, India, Egypt, South Africa, and the West Indian Islands. The United States Army uses its vaccine in the United States, Philippine Islands, Hawaii, Alaska, China, and Panama; and everywhere there is a remarkable uniformity in the protection against typhoid fever. If there was need for a polyvalent vaccine, it would seem that somewhere we would find a marked difference in the degree of immunity conferred by this monovalent vaccine.

b. Living: (1) Castellani, heated to 50°, one hour; (2) Metchnikoff and Besredka's sensitized.

Theoretically, living vaccines should produce the highest degree of immunity; but there is very little evidence on this subject from the use of these vaccines on man. The results from the use of the killed vaccine have been so good that it is difficult to see how any vaccine could give better results.

We do not know much about the keeping qualities of these vaccines, they are more difficult to prepare than the killed vaccines, and we can not protect against contamination as we can with killed vaccines.

Contamination with tetanus and plague bacilli, in using living vaccines, has done much to discredit the use of a living vaccine in anticholera vaccination.

c. Killed: (1) Wright-Leishman; (2) Kolle-Pfeiffer; (3) killed sensitized.

The Wright-Leishman vaccine is a broth culture, killed by heating at 53° C. for an hour. In the earlier work, the culture was heated to 60 C.; and Leishman considers that these early vaccines were inert, or not very active, as a result of being heated too high.

The Kolle-Pfeiffer vaccine is an agar culture killed by heating to 60°C., for one to two hours.

It is seen that the United States Army vaccine is a combination of these two; the agar culture of the Kolle-Pfeiffer, and the heating to 53° C. of the Wright-Leishman.

A killed sensitized vaccine has been put on the market in this country; and Force[5] has reported good results from the use of a killed sensitized vaccine prepared by Gay and Claypole.

d. Bacillary fractions: (1) Vincent's autolysate; (2) Vaughn's residue.

Vincent has reported excellent results from a small series of persons immunized with his polyvalent autolysate; and, since that time, Vincent's vaccine has been used on a large number of men in the French Army with good results.

Two claims for some of these vaccines, especially the sensitized, are the short time necessary for immunization, and the freedom from reaction. In a small series of vaccinations on physicians at the Army Medical School, during the past year, sensitized vaccines produced at least as severe reactions as did the army vaccine.

Tests carried out by Captain Nichols at the Army Medical School on Besredka's sensitized living vaccine showed that the original vaccine was harmless and does not produce carriers in rabbits when injected intravenously; but the first transplant on agar is pathogenic; and the vaccine itself produces typical lesions when injected directly into the gall bladder. So, any food or water accidentally contaminated with this vaccine might transmit the disease to non-immunes. As vaccine containers are frequently broken in shipping, it follows that this sensitized living vaccine is not as safe to handle as is a killed vaccine.

It is entirely possible that better vaccines will be produced; but our results on men, with a killed vaccine, stand out against the claims for any other; and we see no reason for changing our vaccine until some other shows better results on men.

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[5] *Am. Jour. Public Health,* 1913, III., p. 750.

2. *Duration of Immunity. Tests for Immunity.* How long does a vaccinated person preserve the immunity he has acquired? This is a difficult question, as we have no test that shows when a man's immunity has run out. The method of estimating the quantity of immune substances in the blood does not answer the purpose. Agglutinins disappear from the blood of vaccinated persons, as they do from the blood of persons who have had typhoid fever, in one to two years. Leishman has shown that it is exceptional to find any evidence of an increased amount of immune substances (agglutinins, specific bacteriolysins, and opsonins) nine to twelve months after inoculation, though there is definite statistical evidence that the majority of the inoculated persons retain an increased resistance to infection up to eighteen months or two years.

Leishman is of the opinion that in the great majority of cases little or no protection remains after a lapse of two years from the date of inoculation of two doses of the English Army vaccine.

We believe that our three doses will give us more lasting immunity than will the two doses given by the English, and our present rule is to revaccinate against typhoid as well as smallpox on every reënlistment; that is, every four years.

Gay and Force[6] have recently reported on a skin reaction indicative of immunity against typhoid fever. The method is a modification of the von Pirquet method of tuberculosis testing: A glycerin extract of the typhoid bacillus is prepared as in Koch's old tuberculin, and this "typhoidin" is applied as in the von Pirquet method of tuberculin testing. A positive reaction consists in an areola of 4-12 mm. in diameter, with often some induration. Gay and Force report excellent results from the use of this test.

3. *The Paratyphoid Problem.* The antityphoid vaccination gives no protection against paratyphoid fever. So, we are confronted with the question as to whether it is advisable to use a "mixed" vaccine of typhoid and paratyphoid bacilli. Beginning with 1909, our paratyphoid fever has been differentiated from typhoid. Our paratyphoid fever in the United States is as follows: 1909, 3 cases; 1910, 3 cases; 1911, 2 cases; 1912, 3 cases; 1913, 3 cases; 1914 to date, 1 case.

So, in the past five years and eight months we have had 15 cases of paratyphoid fever among troops in the United States, and 8 cases among troops on foreign duty; a total of 23 cases of paratyphoid fever. This small number of cases of paratyphoid fever hardly seems to require our vaccinating the entire army against paratyphoid fever. Certainly, the small number of cases we have had in the United States does not seem to require vaccination against paratyphoid fever in the United States. Most of our paratyphoid fever has been due to *Bacillus paratyphosus* "B," while most of the paratyphoid fever which the English have met in India is due to *Bacillus paratyphosus* "A."

TABLE IV. TYPHOID FEVER. UNITED STATES. OFFICERS AND ENLISTED MEN, U. S. ARMY.

Years.	January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1908	5	6	4	2	3	11	14	31	25	26	12	8
1909	4	10	6	4	11	15	26	14	16	45	20	6
1910	8	11	1	4	2	6	12	27	21	16	20	11
1911	3	3	3	7	4	4	4	7	4	4	1	0
1912	1	2	2	0	0	3	1	3	1	4	0	1
1913	0	0	0	0	0	1	0	0	1	0	1	0
1914	0	1	1	0	0	1	1	0				

Paratyphoid fever included in figures for 1908, but excluded in other years.

Cases paratyphoid: 1909, 3; 1910, 3; 1911, 2; 1912, 3; 1913, 3; 1914 to date, 1.

E. PRACTICAL QUESTIONS.

I put these points down as "questions," since we are not infrequently asked about these things, and we consider that the answer is definite—they are settled.

1. *The Negative Phase.* In his early work, Wright advocated the doctrine that antityphoid vaccination actually and materially increased one's susceptibility to infection for a time. This was generally accepted and was the cause of some hesitation to vaccinate in the presence of an epidemic. In later work, Wright speaks more guardedly, and says that the risk of a negative phase comes seriously into con-

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[6] *Arch. Int. Med.*, 1914, xiii., p. 471.

sideration only when excessive doses of vaccine are employed, or when the prophylactic inoculations are undertaken in the actual presence of infection.

Russell vigorously combated the doctrine of the negative phase, and pointed to numerous instances where prophylactic inoculations had been carried out in the presence of an epidemic, with never an indication of increased susceptibility immediately following vaccination.

Leishman considered that the dangers of a negative phase had been exaggerated, and that they were more theoretical than real; and he has recently said that he is more than ever convinced that, with the dosage of 500 million and 1000 million, there is nothing to fear in the way of an increased susceptibility during the days immediately following an inoculation.

So, as Wright, in 1902, considered it necessary, in his conclusions, to emphasize the danger of a negative phase, to-day we will, in our conclusion, have to emphasize the belief that there is nothing to fear from a negative phase, with our present method of antityphoid vaccination.

2. *The Tuberculosis Question.* The question has been asked whether antityphoid vaccination predisposes to any other disease, and especially to tuberculosis. The diseases that show an increase, according to the Surgeon General's report, in 1912, are: (1) Eruptive fevers, other than measles, smallpox and typhoid; (2) diphtheria; (3) mumps; (4) cancer and other malignant growths; (5) diseases of the brain and spinal cord; (6) pleurisy; (7) tonsillitis and other diseases of the pharynx; and (8) appendicitis. Certainly antityphoid vaccination is not in any way responsible for these increases.

Let us now turn to the question of whether antityphoid vaccination has increased our tuberculosis. Tuberculosis in the army has gradually decreased from 4.39 per 1000 in 1908, when there was no antityphoid vaccination, to 3.49 per 1000 in 1912 when the entire army had been vaccinated. This decrease has gone on during 1913 in the United States, where the greater part of the army is, the slight increase in the total being due to an increase in the Philippine Islands and in Hawaii, attributable to other causes.

TABLE V. TUBERCULOSIS, ALL KINDS, ENLISTED MEN ONLY; CASE-RATE PER THOUSAND.

Year.	United States.	Philippine Islands.	Alaska.	Hawaii.	Transports.	Panama	China.	Total.
1908	3.99	6.10	2.96	3.92	3.46			4.39
1909	4.53	5.06	3.76	2.96	3.00			4.53
1910	3.34	5.46	1.85	4.10	0.80			3.65
1911	3.64	3.77	2.68	1.99	1.76			3.55
1912	3.25	5.02	4.18	2.07	2.74			3.49
1913	3.07	6.75	1.75	4.24	4.37	3.76	3.29	3.66

But we can get at it in another way. In the years 1908, 1909, and 1910, we had 239, 282, and 198 cases of typhoid fever in the army; that is, 719 cases of typhoid fever in the three years. For this purpose we may consider the antityphoid vaccination as a little attack of typhoid fever. Now, on that basis, in 1912 we had over 90,000 cases of typhoid fever; but our tuberculosis rate did not rise as should have been the case if typhoid fever or antityphoid vaccination is a factor in the cause of tuberculosis.

Tuberculosis has decreased in the navy as it has in the army. It is not easy to get anything for comparison from the civil rate for tuberculosis.

3. *Notes of Bad Effects from Antityphoid Vaccination.* The only report we have of an untoward result is where a musculospinal neuritis followed a deep injection of the vaccine; instructions are for subcutaneous injection. A recent case was made considerable of by the newspapers. A man who had received antityphoid vaccination, died a short time afterward, the diagnosis being typhoid fever. At autopsy, a malignant endocarditis was found, and there were no lesions of typhoid fever. In another case where death occurred shortly after antityphoid vaccination, autopsy showed that the man was in the second or third week of typhoid fever when he was inoculated—a case of walking typhoid. In view of the therapeutic use of large doses of typhoid vaccine, it does not seem that the antityphoid vaccination was in any way concerned with the death of this man.

4. *Vacation Typhoid.* Vacation typhoid is familiar to all of us. When a person goes away for his vacation, he is unable to control his food and drink, and the chances for infection are greatly increased. In view of the demonstrated efficiency of antityphoid vaccination in protecting against typhoid fever, every

person who is going on a vacation should be vaccinated against typhoid fever before he goes.

And here it is well to recall that antityphoid vaccination is not absolute protection against typhoid fever, any more than is an attack of typhoid fever, and it is not necessarily protective against an overwhelming dose of infectious material; so, vaccination is no excuse for carelessness in exposing one's self to infection. I know of intelligent men who have deliberately taken food and drink at places with insanitary surroundings, when there was no necessity for it, remarking, at the time, that they were not afraid as they had been vaccinated.

5. *General Vaccination.* It is demonstrated that antityphoid vaccination is essential in the army. We see that it is advisable for nurses and attendants in hospitals; inmates of asylums; residents of industrial villages, camps, and isolated communities where the typhoid case rate is above the average; and persons going away from home or on a vacation.

But, highly efficient as it would be, it does not seem necessary or practicable to carry out antityphoid vaccination as a general measure in the United States, as under ordinary conditions, especially in the larger cities, the people who remain at home run little danger of contracting the disease.

CONCLUSIONS AND WORKING BASIS.

1. Antityphoid vaccination protects as well as does smallpox vaccination.

2. There is no danger from a negative phase.

3. Antityphoid vaccination does not increase tuberculosis, or other disease.

So, antityphoid vaccination is definitely indicated: (1) In the Army, Navy, National Guard; (2) among the personnel of all hospitals; (3) in schools, asylums, prisons, workhouses; (4) in camps of all kinds; (5) among travelers; (6) among young persons; since typhoid fever is a disease of youth and early life; (7) among persons living in cities or districts where the typhoid fever rate is continuously high; (8) among the members of a household where a case of typhoid fever occurs; all contacts; (9) as voluntary vaccination of the non-immune population on the occurrence of an epidemic of typhoid fever.

DISCUSSION.

DR. JOSEPH C. OHAIL, Pittsburgh: This paper will be in the nature of a presentation of some work along the line of typhoid vaccination rather than the discussion of point or points brought out in the paper just read.

Through some of the earlier articles on typhoid prophylaxis, especially those by Major F. F. Russell, I was much impressed by the results of vaccination as well as by its rationale.

In our work at the Allegheny General Hospital, we only too frequently have had nurses in training develop typhoid, usually of quite a severe type; death occurred in two or three instances, a comparatively high mortality. When the matter of prophylaxis was presented to the board of managers they promptly made arrangements to furnish vaccine for every nurse who would voluntarily accept the treatment. Miss Muldrew, the directress of nurses, and her successor, Miss Henderson, have urged their pupil nurses to avail themselves of the treatment. At first more than half accepted and now scarcely any fail to do so.

We have used but one firm's make of vaccine and have used the individual dose package in preference to the stock bottle package. We deem it more exact and less likely to lead to infection. Three doses are given to each individual, each dose ten days apart. The doses are the same, the first contains 500 million bacteria, the second and third 1000 million. They are given hypodermatically, of course.

The site of the injections has been the back of the arm, preferably the left. Tincture of iodin, U. S. P., locally has been the only antiseptic used. Cotton and collodion were used as a dressing while the surplus iodin was removed by the use of alcohol. There has not been a single local infection.

A total of one hundred forty-three persons have been vaccinated between August, 1911, and July, 1914. None lost any time by reason of reaction from vaccine, save two. The first one had severe headache with slight nausea and was off duty one day following her first injection. The subsequent injections gave no disturbance. The second person showed considerable reaction together with fever for a day or two after each injection. Contrary to the usual sequence each injection was followed by a more severe reaction than the preceding injection. She, too, was off duty two or three days after each of her injections. A few showed slight local reaction, but required no special attention. No attention was paid to menstruation and no disturbances were noted. In one case, even an infected finger did not deter giving the vaccine in the other arm. No disturbance arose. For convenience the injections were given at 5 P.M. The night nurses went on duty at 7 P.M.; the day nurses returned immediately to their duties for the day and then returned as usual again next morning. No attempt was made to lighten the work in any way of those taking the vaccine.

One nurse of the group vaccinated August, 1911, had an illness with mild fever, lasting about three weeks during December, 1912, and January, 1913. I saw her the first three days of her illness and found a slight pleural rub with many fine moist râles through the chest. Then, because of my illness, Dr. James P. McKelvy took charge of her and, through his kindness, I am able to give you the final outcome. The pleuritic rub had disappeared and there remained nothing but the râles, when he took charge. Both Widal and blood culture for typhoid were negative. The final diagnosis was bronchitis. This is the only person of those vaccinated, so far as I know, who has had a Widal subsequent to vaccination.

There have been about fifty nurses, probably less, who, since vaccine has been used, have not availed themselves of it. Of this group at least two have had typhoid, one during her course in training, the other subsequent to it. Both had severe attacks. One, I am told, had several intestinal hemorrhages.

Of course, it is not possible to draw exact deductions from our present data. Yet in two groups of persons under identical surroundings we find two cases of typhoid in the group containing only one third as many persons as the group which has had none. This is certainly strong presumptive evidence to say the least. The fact that typhoid of late years has not been near so frequent as formerly militates against proving the efficacy of the vaccine since the vaccinated have not been put to so severe a test as they might have been. Nevertheless, I think our work has shown that it is worth while to vaccinate.

As noted above, it has been our observation that nurses are apt to develop an unusually severe type of typhoid; hence any evasion of an attack is a thing much to be desired. It means the escape of a nurse from much danger, and gain to the hospital from a financial standpoint and the relief of those in authority from much anxiety.

I believe the time will soon come when a nurse entering training will be required to have been vaccinated against typhoid as she is now against smallpox.

DR. W. CHARLES WHITE, Pittsburgh: I merely wish to bring to the notice of the society more especially the name of Sir A. E. Wright, through whose work all the saving of life through typhoid vaccination has been made possible.

J. BRONFENBRENNER, PH.D., Pittsburgh: I am very sorry not to have been able to hear Major Whitmore's paper except at the very end, and can judge as to the contents of the paper only by the summary given. I therefore find myself desirous to ask a few questions.

I would like to know whether any comparison has been made in vaccinating the subjects by Besredka's method. Not being a clinician I have no personal experience to offer, but it seems from the literature that in some forty thousand cases, as well as in the experiments on chimpanzees, Metchnikoff and Besredka have obtained some very encouraging results. Being a laboratory man I am especially interested in this question inasmuch as the principle involved in the preparation of vaccine by Besredka theoretically offers an entirely new viewpoint, as it does away on the one hand with the necessity of heating the bacteria, and in so doing probably changes some of their antigenic properties; and on the other hand it opens a new way of employing the natural bacteriocidal properties of the body fluids in facilitating their work by the supply of sensitized antigens. If Major Whitmore had no experience along these lines I would still ask him to give his personal opinion on this question and we will all appreciate the opinion of a man of his experience.

Another question which escaped my attention if it was mentioned is the opinion of Major Whitmore as to the diagnostic as well as the prognostic value of Gay's skin test. Unfortunately I again lack any experience, but so far we have collected at the West Penn Hospital the results of the application of this test in some forty cases and the results seem to be sufficiently interesting to trouble Major Whitmore for his opinion on this subject.

Another question which interested me was the relation, if such exists, between the susceptibility to tuberculosis and typhoid vaccination, but to this part of Major Whitmore's paper, I had the pleasure of listening, and am quite satisfied with his explanations on the subject.

DR. JOHN A. LICHTY, Pittsburgh: I notice the "undetermined fevers" disappear as vaccination has been instituted. It has been my custom to consider that recurring attacks of so-called typhoid fever are probably reinfections from old latent tubercular lesions. In fact, I have taught that such cases should be looked upon as tubercular until there is conclusive proof to the contrary. We all have cases with mild fever, the etiology of which we can not determine. It has occurred to me since seeing Major Whitmore's tables of results that (1) typhoid vaccination may be specific for other fevers, (2) most or all of the undetermined fevers are typhoid, or (3) it may be presumed by the attending physician that because a patient is vaccinated it can not possibly be typhoid, and hence it must be some other definite condition associated with fever.

MAJ. WHITMORE, closing: I am greatly interested in what Dr. Ohail has said; and his results serve to confirm us in our belief in the value of antityphoid vaccination.

I am very glad that Dr. White has spoken of the great prominence of Sir A. E. Wright in the work on antityphoid vaccination. All of us consider Sir A. E. Wright as the father of antityphoid vaccination, and the only reason that I did not refer more to the work done by him was, as I stated in beginning my paper, that there was not time to enter into the history, or to attempt to cover the field, of antityphoid vaccination.

Dr. Bronfenbrenner has asked some very important questions. I wish I could give definite answers. I referred to Besredka's vaccine under "Problems Remaining," and I am not at all sure that Besredka's vaccine will not confer better immunity than does our vaccine. We must remember that, in their work on chimpanzees, Metchnikoff and Besredka gave overwhelming doses of infectious material; and, in practice, such overwhelming doses are not commonly taken in by man. Our objection to the use of Besredka's vaccine in the army is that we do not consider it safe to send it out in the mails and to have it handled as vaccines have to be handled in general work. It is safe to use in the laboratory.

Undoubtedly, the protein of the typhoid bacillus is changed in the killing, and, for that reason, in killing, we use as low a temperature, and as short a time as is possible.

Gay and Force have reported excellent results from their "typhoidin" test; and, if this test proves to be of value, it will be a great help, as one of our greatest problems is to determine how long immunity lasts after antityphoid vaccination.

In answer to Dr. Lichty, I will say that I did not mean that the slide showing a reduction in undetermined fevers indicated that antityphoid vaccination decreased the number of cases of undetermined fevers; the slide was intended to show that, with the increased facilities for diagnosis, the cases of fever were properly diagnosed.

We never vaccinate a person who has a fever, or who is not in good health.

Should a doctor confine all his interests in his professional sphere or should he rather take a share in all movements for the benefit of the public? There are many who advocate exclusive devotion to medical science, which they hold is amply sufficient for the most energetic worker and will reward all his zeal. As many, perhaps more, regard it as desirable if not even a duty of every citizen to promote his country's and his neighbor's welfare. Liverpool is grateful for the work done for it by the late Sir Mitchell Banks, which in no way restricted that for his profession. Discretion as to the work taken up and discrimination in the manner of doing would seem to suffice to produce harmonious results. Banks declared we must be more than prescribers of physic or dressers of wounds. "In my youth," he said, "I had it strongly recommended to me to stick to my profession and leave everything else severely alone. The life of a doctor was to see patients, do operations, order drugs, and collect fees. I thank God that I entirely repudiated this idea of my profession. London Letter, *Medical Record.*

THE VALUE OF TYPHOID VACCINES IN THE TREATMENT OF TYPHOID FEVER.

BY E. B. KRUMBHAAR, M.D.,
AND R. RICHARDSON, M.D.,
Philadelphia.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Following such phenomenal success in the prophylactic use of typhoid vaccines, it is but natural that with a logical theoretical basis they should also be tried for the cure of typhoid fever. The large number of typhoid cases admitted annually to the Pennsylvania Hospital have been utilized by us as a favorable basis for an investigation of the value of such a procedure. While the benefit of course is less striking than that shown in the figures Major Whitmore has just quoted in prophylaxis, we are gratified to be able to report distinctly favorable results from three years' observation on cases at the Pennsylvania Hospital. In the later cases, whether from the larger doses used or the more experience acquired, the results have been so much more favorable that we feel justified in recommending the proper use of typhoid vaccines as a specific and valuable form of treatment of this very important disease.

In 1912 Drs. J. C. Wilson and J. Walker treated forty-four cases with Mulford's stock antityphoid vaccine and have been good enough to give us their hitherto unreported material to further this study. Last year we treated another series of thirty-three cases with a vaccine prepared by Dr. Richardson from the celebrated "Rawling's" strain, the same as that used by both the English and American armies. In order to give the procedure as critical a test as possible, the vaccine was given only to the patients in the severer cases admitted to the hospital. Our tabulated figures proved but little better for the vaccinated than the unvaccinated. Deceived at first by our method of selection, it was not until we had carefully analyzed the individual cases that we realized how constant the improvement after vaccination had been. Thus stimulated, we began again this year with a vaccine differently prepared and in larger doses. Unfortunately, we were prevented by sickness from applying the excellent results obtained in this series to more than sixteen cases, before the epidemic abated. These three series, aggregating ninety-three cases, form the basis of this study.

History. The history of the curative use of typhoid vaccines is brief. In 1893, Fraenkel[1] treated fifty-seven severe cases with a vaccine prepared much as are those of to-day. Typhoid bacilli, grown for three days in thymus bouillon, were killed at 63° C., tested for sterility and injected subcutaneously (dosage not given). Although he noted a marked improvement and recommended its further use, his work apparently escaped notice and no further attempts were made on such lines for fifteen years. In 1908 Pescarolo and Quadrone[2] inoculated twenty patients having typhoid fever with living attenuated organisms in small doses, and in spite of a rather severe reaction reported favorable results.

With an antityphoid serum (prepared from horses immunized with a toxin from typhoid bacilli grown on special media) Chantemesse[3] reduced the mortality from 17 per cent. of untreated cases to 4.3 per cent. in 1000 cases thus treated. According to Semple,[4] it is generally accepted that Chantemesse's serum "acts as a typhoid vaccine, owing to the probability that it contains the bacterial elements originally injected into the horses which supplied the serum." In this summary we have not taken account of vaccines prepared by methods differing from Wright's, such as Renaud's irradiated or Besredka's sensibilized vaccines. Results of treatment with these methods are given by Netter.[5]

With the promulgation of Wright's opsonic theory and his treatment by vaccines, came a renewed interest in typhoid vaccine therapy. In January, 1909, Watters and Eaton[6] reported the results of thirty cases thus treated, the first routine curative use of typhoid vaccine after Fraenkel. The next month Captain Smallman[7] at Leishman's suggestion, treated 36 cases in the Indian army with doses ranging from 100 to 350 million bacteria, prepared according to Wright's method. There were three deaths, no relapses, and the patients seemed less toxic. With perhaps unconscious humor he says, "It was no uncommon thing to go into the ward when full (sic), and find nearly every patient quietly and comfortably sleeping."

Since then over 1800 cases have been reported by about forty observers, the great majority with favorable results. Generally speaking, the larger the dose the better the results obtained. Thus Sadler,[8] using the very small dosage of one and two million had 14 deaths in 92 cases; whereas Meakins and Foster, using one to three doses of 1000 to 1500 million, had but one death in 42 cases. The average duration of fever in this series was reduced from thirty-seven to twenty-eight days and complications occurred in 5 per cent. (*versus* 42 per cent. unvaccinated); relapses in 2.4 per cent. (*versus* 13 per cent. unvaccinated). To some authors, it is doubtful if doses under 50 million produce sufficient effect and yet Watters and Eaton[9] with doses averaging 25 to 30 million reported favorable results in 69 cases (2 deaths, and 6 relapses). In the largest single series reported,[10] Petrowitch at Uskub reduced the mortality of 460 cases to 3.2 per cent., as compared with 8 per cent. of 220 unvaccinated cases. He used one to three doses of 20 million each of vaccine supplied from the English Army. In Semple's[11] 60 cases there were only 3.3 per cent. each of deaths and relapses, the dosage being usually four to six doses of 6 to 50 million in the earlier cases, and of 50 to 100 million in the later, and he would now recommend even larger doses.

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[1] Fraenkel, E.: Ueber specifische Behandlung des Abdominal Typhus, *Deutsch. med. Woch.*, 1893, XIX., p. 985.

[2] Pescarolo, B., and Quadrone, C.: Aktive Immunisation durch subkutane Injektion lebender Typhusbazillen bei Eberthscher Infektion. *Zentralb. f. inn. Med.*, 1908, XXIX., p. 989.

[3] Chantemesse: Serotherapie de la fièvre typhoide, *XIV.* Intern. Kong. f. Hygiene u. Demographie, 1908, I., p. 195.

[4] Semple, D.: The Vaccine Treatment of Typhoid Fever, *Jour. Vacc. Therapy*, 1912, I., p. 31.

[5] Netter, A.: Vaccinotherapie, dans la fièvre typhoide, *Bull. et Mem. Soc. Med. Hop. de Par.*, 1913, XXXVI., p. 126,

[6] Watters, W. H., and Eaton, C. A.: The Vaccine Treatment of Typhoid Fever, *Medical Rec.*, 1909, LXXV., p. 93; Ibid. 1913, LXXXIV., p. 518.

[7] Smallman, A. B.: Preliminary Note on the Use of Antityphoid Vaccine in the Treatment of Enteric Fever, *Jour. Royal Army Med. Corps*, 1909, XII., p. 136.

[8] Sadler, F. J.: Vaccine Treatment of Typhoid Fever, *Jour. Vaccine Therapy*, 1912, I., p. 31.

[9] Watters, W. H., and Eaton, C. A.: The Vaccine Treatment of Typhoid Fever, *Med. Rec.*, 1911, LXXIX., p. 797.

[10] Petrowitch, M., quoted by Netter: *Bull. et Mem. Soc. Med. Hop. de Par.*, 1913, XXXVI., 126.

[11] Semple: *Loc. cit.*

The latest report by Captain MacArthur[12] emphasizes the importance of early treatment. In 63 cases of his series, there were 2 deaths (3.1 per cent.), 2 relapses (3.1 per cent.) and 5 other complications (7.9 per cent.) but all of these occurred in the 29 cases vaccinated in the "unfavorable stage" (*i. e.* after the tenth day).

Less favorable results have been reported by M. W. Richardson,[13] using a dosage of 10 to 100 million on 28 cases. He found that the results were "not striking," except that there was only one relapse as against 10 relapses in 77 unvaccinated cases. Hornor[14] found unsatisfactory results with 40 vaccinated cases and 95 unvaccinated controls. With an average total dosage of 516 million, the mortality of the vaccinated was 10 per cent., as opposed to 11.5 per cent. of the unvaccinated; relapses 20 per cent., unvaccinated 11.5 per cent.; and complications 55 per cent., unvaccinated 50.5 per cent. The average duration of fever of the vaccinated was 24 days unvaccinated 23 days. Although there were no deaths in Nichols'[15] 11 cases, two relapses and two prolonged fevers made him feel that "the results were quite inconclusive."

This involves less than 5 per cent. of the total number, however, and in the other 95 per cent. the results have been distinctly favorable. Even such a difficult condition as typhoid osteomyelitis lasting a year has been cured in a few weeks after the use of vaccines (Rosenberger)[16]; and a typhoid periostitis of six years' standing cured in two weeks after vaccines (Sharpless).[17] Two of Meakin's and Foster's[18] series, typhoid carriers of eight and twelve years' duration, were also cured by vaccine therapy. The method therefore may be said to have successfully passed the stage of "primary laudation," beyond which Osler says in Modern Medicine that no specific remedy for typhoid had passed. A table of cases thus far vaccinated follows:

Theory. The further stimulation of antibodies during an attack of typhoid fever by the injection of dead bacteria in order to lessen the virulence of the attack is theoretically logical, just as is its prophylactic use for the

STATISTICS OF CURATIVE VACCINE THERAPY OF TYPHOID FEVER TO DATE.

Author.	No. Cases.	Deaths.	Relapses.	Dosage.	Remarks.
Anders[19]	8	—	1	25-50 million	
Callison[20]	38	5	1	500-600 million (repeated every fourth day	Very few complications
Carr[21]	2	0	0	25-50 million (2 doses)	
Cournmont[22]	39	2	8		5% mortality vs. 20% unvaccinated.
Duncan[23]	6	0	0	50-1000 million (1-2 doses)	
Elliott[24]	3	0	0	500 million (1 to 2 doses)	
Fletcher[25]	14	2	1	500-1000 million (1 to 2 doses)	No bad results; all helped.
Grace[26]	6	—	1		Cases made milder
Gray[27]	126	5	—		
Hollis[28]	51	2	8	10-250 million	Less toxic
Hornor[29]	40	4	22	Average total 560 million	No beneficial effect
Jewett[30]	15	2	2	25-400 million	No effect in 3; some help 7; marked 5
Krumbhaar, Richardson, Series 1	44	4	3	Average total 926 million	Mulford's Typhobacterin
Series 2	33	1 (3)	2	Average total 720 million	"Rawling's" killed at 60 degrees.
Series 3	16	0	0	Average total 1640 million	"Rawling's" killed at 56 degrees Best
MacArthur[31]	45	2	7	150-1500 million (3-day interval)	Improved, especially if early
McLaughlin[32]	13	0	—	50-500 million	Good influence
Martin[33]	2	1	—	30 million (3-5 doses)	One well in 2 weeks other moribund
Meakins, Foster[34]	41	1	1	1000-1500 million (1-3 doses)	Less fever, toxemia and mortality than the unvaccinated
Nichols[35]	11	0	2		Average severity
d'Oelsnitz[36]	10	0	0	65 million (several doses)	Did better than the unvaccinated
Petrowitch[37]	460	15	—	20 million (1-3 doses)	3.2% mortality, vs. 8% unvaccinated
Ream[38]	17	0		50-250 million	14 benefited, 3 no effect
Richardson, M.W.[39]	28	—	1	10-100 million	Fewer relapses, otherwise not striking
Sacquepée[40]	28	2	—	100-700 million (1-3 doses)	Good effect
Sadler[41]	92	14	—	1-2 million (several)	Benefited
Sappington[42]	22	3	—	5-50 million (1-9 doses)	75% benefited
Semple[43]	60	2	2	8-30 million (4 doses) 100-300 million	No risk. Benefited
Simons[44]	6	1	—		Less severe
Smallman[45]	30	0	3	100-350 million	Good results
Watters[46]	158	17	8	2-60 million	75% helped. Shorter fever
Watters[46] (quoted*)	316	14	15		
Wilson[47]	6	0	0	250-500 million	Less toxic. Shorter fever
Wolverton[48]	12	0	0	50-300 million	Beneficial
Single reports	6	0	0	50-250 million	All benefited (some chronic complications)
Total	1806	99	88		35 out of 39 authors (reporting 93% of cases) found vaccines useful
	5.4% Mortality.				

*For these cases, quoted by Watters, no references were given. None are duplicated from the other authorities quoted by us.

prevention of the disease. A study of the agglutination curve after prophylactic vaccination shows that there is an increase on the fourth or fifth day, which is still further raised on the sixth or eighth day and then slowly drops to normal. Somewhat the same course is followed by the agglutination curve after vaccination during the attack of typhoid fever.[49] The frequent absence of the Widal reaction until the second or third week shows that the body may take some time to produce the necessary antibodies, and in such cases, if the diagnosis can be made by other means, early vaccination may be of great help in shortening the attack by earlier stimulation to adequate antibody formation. It must be remembered that many strains of typhoid bacilli have very little ability to form agglutinins, while the culture from which our vaccines are made has been picked largely for its value in that direction and is therefore presumably better than an autogenous vaccine. It is frequently found that a bacillus from a virulent case is poor in agglutinins, just as our strain used for vaccination, though strong in agglutinins is weak in toxic properties. Although recent evidence tends to show that agglutinins are not necessarily protective, in the absence of better criteria, an increase in agglutinins may still be considered as some indication of increased protection.

The natural antibody formation is presumably largely limited to the spleen, lymph nodes, intestines, and places where the typhoid bacilli mainly congregate, and as any body cell may participate in antibody formation, it is probable that the subcutaneous injection of the dead bacilli affords new areas for antibody formation, and thus helps to stem the tide of invasion. This, as we understand it, is Major Russell's, Leishman's, and Semple's theory of the beneficial action of the curative action of the vaccine in a systemic infection, in spite of Hektoen's[50] experiments on dogs which tend to show that the tissues at the site of injection of antigen do not take part in the production of antibodies. The "negative phase" of Wright's opsonic work, is absent or negligible, according to both Leishman[51] and Russell,[52] and certainly no clinical evidence of its presence is usually seen. In this connection it must be remembered that the rise in temperature that so often follows the injection of adequate amounts of vaccine is no indication of a negative phase, and further that the temperature curve is an index of the degree of intoxication, not of the degree of infection or resistance to it.

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[13] Richardson, M. W.: Vaccine Therapy; General Principies, *Jour. A. M. A.*, 1910, LIV., p. 255.

[14] Hornor, A. A.: Vaccine Therapy of Typhoid, *Bos Med. and Surg. Jour.*, 1914, CLXX.

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[19] Anders, J. M.: Use of Typhoid Vaccine in Typhoid Fever, *Jour. A. M. A.*, 1910, LV., p. 2023.

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[28] Hollis, A. W.: Treatment of Typhoid Fever with Vaccines, *Med. Rec.*, 1910, LXXVII., 642.

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[30] Jewett, D. B.: Use of Typhoid Vaccines, *No. Amer. Jour. of Homeop.*, 1912, XXVII., 35, 354.

[31] MacArthur: *Loc. cit.*

[32] McLaughlin, G. E.: In discussion. *Med. Rec.*, 1911, LXXIX., p. 1161.

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[35] Nichols: *Loc. cit.*

[36] d'Oelsnitz, M.: Dix Cas Favorables de Vaccinotherapie Antityphoide chez l'enfant, *Bull. et Mem. Soc. Med. Hop. de Par.*, 1914, XXXVII., p. 5.

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[40] Sacquenee, C.: Sur la Vaccinotherapie Antityphoidique, *Bull. et Mem. Soc. Med. Hop. de Par.*, 1913, XXXV., p. 845.

[41] Sadler: *Loc. cit.*

[42] Sappington, S. W.: Studies in Typhoid Vaccines and Opsonins, *Jour. Med. Research*, 1910, XXII., p. 455.

[43] Semple: *Loc. cit.*

[44] Simons, M. H.: Notes on Cases Treated by Vaccines, *U. S. Nav. Med. Bull.*, 1910, IV., p. 46.

[45] Smallman: *Loc. cit.*

[46] Watters: *Loc. cit.*

[47] Wilson, H. T.: Six Cases of Enteric Fever Treated with Antityphoid Vaccination, *Jour. Roy. Army Med Corps*, 1910, XV., p. 191.

[48] Wolverton, W. C.: Vaccine Therapie of Typhoid Fever, *Merck's Archives*, 1912, XIV., p. 307.

[49] Semple, D.: *Loc. cit.*

[50] Hektoen, L.: On the Local Production of Antibodies, *Jour. of Inf. Dis.*, 1911, IX., p. 102.

[51] Leishman, W. B.: *Jour. Roy. Army Med. Corps*, 1909, XII., p. 136.

[52] Russell, F. F.: *Bost. Med. and Surg Jour.*, 1911, CLXIV., p. 1. *Johns Hop. Hosp. Bull.*, 1910, XXI., p. 83. *New York State Jour. Med.*, 1910, X., p. 535.

According to Theobald Smith,[53] "The effectiveness of vaccines applied in the course of acute febrile diseases, such as typhoid and pneumonia, must be accounted for by principles of which experimental medicine has as yet no definite knowledge"; and in this predicament we must fall back on clinical and statistical evidence. The crux of the matter, as Semple puts it, is that "vaccines in quantities sufficient to stimulate increased production of bacteriotropic substances can be injected hypodermically into patients suffering from typhoid fever without adding in the least to their toxic condition." We have increasing evidence that the clinical results of such inoculation are favorable.

Preparation. The vaccine used during the summer of 1913 was prepared after Wright's method. The cultures were grown on plain agar and suspended in sterile normal salt solution. After shaking and counting the suspension, organisms were killed by a temperature of 60° C. for one hour. The vaccine was made with a thousand million organisms to each cubic centimeter and 0.3 of one per cent. of lysol added.

The only change in making the vaccine for use during the past year was in the method of killing the organisms. This was done at 56° C. for one half hour.

Analysis of Cases.[54] Series 1, forty-four cases were treated with Mulford's stock typhobacterin. In this, as in the other series, the treatment of the vaccinated cases was otherwise identical with the unvaccinated cases. The Widal reaction was positive before inoculation in twenty-four cases, and suggestive in six. Four of the fourteen negative cases gave positive blood cultures, and the other ten gave sufficient clinical evidence to be considered typhoid by Drs. Wilson and Walker. The total dosage varied from 50 million to 1650 million, given in one to five doses. The average total dosage was 926 million per patient. There were 4 deaths, 3 relapses and 12 complications (5 hemorrhages, 2 perforations, 2 phlebitis, 1 cystitis, 1 periostitis, 1 abscess).

ABSTRACTS OF FATAL CASES.

Case 4. Male, twenty-one years, positive Widal, received only one dose of 100 million on the seventeenth day of disease, a hemorrhage occurred eight days later, followed by double otitis media, mastoiditis, meningitis and death.

Case 11. Male, twenty-two years, negative Widal and blood culture. Received 125 million on the twelfth day and 250 million on the sixteenth day. Was very toxic from the start. Hemorrhages. Death on twentieth day.

Case 32. Female, twenty-one years, positive Widal, 600 million given on twenty-third day; 700 million on twenty-seventh day; 800 million on thirty-first day. Perforated seven days later. Died twenty-four hours after operation. Second perforation found.

Case 44. Male, thirty-four years, positive Widal, 500 million on fifteenth day; 700 million on nineteenth day. Death three days later probably from perforation.

Two of these cases, therefore, received very small doses, and on the other two specific treatment was begun at too late a date. Several others, especially where treatment was begun before the tenth day of the disease showed quick drops of temperature after injection with a short febrile course (Case 20, 9 days fever; Case 24, 17 days fever; Case 31, 15 days fever; Case 33, 17 days fever; Case 41, 11 days fever). Of course, it is impossible to predict what the febrile course would have been without vaccination, and it is fair to say that abortive cases appeared among the unvaccinated controls, but not to the extent or degree that was present among the vaccinated. In several unvaccinated cases also these early drops to normal were frequently followed shortly by remissions of temperature.

Series II. The thirty-three cases in this series were treated with the vaccine prepared by Dr. Richardson from the "Rawling's" strain of typhoid bacilli in total doses varying from 200 million to 1450 million (1 to 3 doses). The Widal reaction or blood culture was positive one or more times in all cases. In practically all cases, a localized redness and soreness of the arm persisted for twenty-four to seventy-two hours. No constitutional aggravation other than a fleeting rise of temperature was noted and the patients nearly always felt better within a few hours of the injection. (Psychic?) There were three deaths in this series, but as the case abstracts will show, there was only one death (Case No. 66, perforation) 3.2 per cent., in which the vaccine treatment could fairly be considered to have failed, and in this vaccine treatment was not begun until the twenty-sixth day. Of the other two, Case No. 57 had already developed a complicating pneumonia, when he was given his first vaccine four days before death, and his death was from pneumonia. The other, Case No. 59, had recovered from his typhoid, and after ten days normal temperature, developed lobar pneumonia and died from it. In 170 milder cases of typhoid not getting vaccines, that were treated in the wards during the same period, there were fourteen deaths (8.02 per cent.).

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[53] Smith, Theobald: What is the Experimental Basis for Vaccine Therapy? *Bos. Med. and Surg. Jour.*, 1910, CLXIII., p. 275.

[54] In order to save space, protocols of individual cases will only be given to bring out special points.

In the thirty-three vaccinated cases, there were two relapses occurring after vaccination (6 per cent.—Cases No. 65 and 68). The former is of especial interest as the only example in our cases where the vaccine may be accused of having done harm. (See Case Abstract.) It is of course impossible here to rule out coincidence, and vaccination was begun very late. In the unvaccinated cases there were 16 relapses (9.2 per cent.).

In the vaccinated cases there were four complications (12.1 per cent.). Of these, a perforation and a pneumonia have already been considered among the fatal cases. Case No. 52 developed phlebitis, and Case No. 67 had a slight hemorrhage, each some days after vaccination. Of the unvaccinated cases eighteen were complicated (10.6 per cent.). The average number of days of fever of the vaccinated cases (including relapses and complications) was 36.7 days; of an equal number of lighter unvaccinated cases occurring at the same period 33.7 days. The average temperature of the vaccinated cases, as near as could be determined, was 102.2° F. before vaccination, 101.4° after vaccination. The average temperature of the same number of unvaccinated cases was 102.3°. The temperature variation (taken fourth hour) was greater in thirteen cases after vaccination than before, less in ten cases, and showed no change in eleven cases. In almost every case a rise in temperature of one to three degrees was noticed immediately after vaccination. This was followed in twenty-three out of thirty-three cases by a distinct fall in temperature that frequently temporarily reached normal. This was nearly always more marked after the second and third doses than after the first. In some cases it fell steadily to normal, where it remained, in others after falling for twenty-four to seventy-two hours, it again rose. Of the ten cases which were not benefited by the vaccines, six (Nos. 49, 54, 55, 58, 60) probably did not receive big enough doses (total dosage between 200 million and 850), three (Nos. 52, 59, 66) were all obviously virulent infections, and two (Nos. 53 and 67) showed no benefit, in spite of adequate dosage (850 million and 1050 million) begun on the eleventh and thirteenth days. In spite of special effort to begin vaccine treatment early, the average day of disease of the first dose was the twenty-first. This is due partly to the type of ward patient, partly to the delay necessary to make a sure diagnosis. Of two who got their first dose before the tenth day of the disease, one (No. 48) had only fourteen days of fever, the other (No. 55) had twenty-nine days of fever. The average days of fever after the first dose was given was 16.3 days, after the last dose 11.3 days.

CASE ABSTRACTS.

No. 48. Male. Positive Widal. Given 100 million on the eighth day of disease (no change): 150 million on twelfth day (temperature rose 1.5° then dropped steadily until it reached normal in 48 hours). Given 400 million on fifteenth day (temperature rose from 98° to 101° for a few hours and returned to normal permanently).

No. 50. Male. Positive Widal. Given 60 million on tenth day of disease (no change); 150 million on fourteenth day (temperature dropped from 102° gradually to normal); 300 million on seventeenth day (temperature reached normal on next day and stayed there permanently).

No. 52. Male. Positive Widal and blood culture. Given 100 million on eighteenth day of disease; 250 million on twenty-first day; 500 million on twenty-fourth day. No appreciable change in temperature occurred after any injection, but a new crop of rose spots were noted after the last dose of vaccine. Recovery after forty-eight days of fever due to a complicating pleurisy and phlebitis. (Note: In the light of later cases, further injections would be indicated in such a case, unless the new crop of rose spots were taken, not as a coincidence, but as an index of the liberation of more living organisms, in which case further specific treatment would be doubtful.)

No. 57. Male. Positive Widal. After twenty-five days fever, including two remissions and relapses, patient developed another rise in temperature.

Two days later 100 million were given, but it was found that the increased fever was due to pleurisy and pneumonia. Three days later 100 million were again given and patient died the same day. (Note. This was not a suitable case for vaccine treatment. While it is impossible to form an opinion as to whether the vaccines contributed to the fatal issue, they certainly are not indicated in such a condition.)

No. 59. Male. Positive Widal. Given 150 million on tenth day of disease; 400 million on thirteenth day, and 700 million on sixteenth day. But little effect from any dose, though temperature fell gradually soon after last dose. Temperature became normal on forty-second day. After ten days normal temperature, a typical lobar pneumonia developed and proved fatal in four days.

No. 65. Female. Positive Widal. Given 150 million on thirty-third day, and temperature dropped quickly to normal on the same day. After three days normal temperature, 400 million were given. This was at once followed by a rise in temperature which ushered in a relapse of considerable severity, lasting twenty-six days. In this case, the vaccine was given to put a stop to a long-continued mild fever. It is doubtful, in the light of this case, whether such procedure is advisable unless there is further evidence of deficient antibody formation.

No. 66. Male. Positive Widal. Given 200 million on twenty-fourth day of disease, 450 million on twenty-seventh, and 800 million on thirty-first day. This case was a very toxic one throughout, and although he seemed benefited by each dose (less toxic and lower temperature), he died on the thirty-fourth day from a perforation.

No. 67. Male. Two positive Widals. Given 150 million on eleventh day of disease; 300 million on fourteenth day, and 600 million on nineteenth day. The temperature went up and stayed up after each dose. A few days after the last dose a mild hemorrhage occurred. Fever continued for seventeen days after the last vaccine was given. (Note: This case may indicate that if no favorable response is made to the first, or possibly the second dose, the case may be unsuitable, and further specific treatment should be abandoned.)

No. 68. Male. Two positive Widals. Given 150 million on fourteenth day; 300 million on seventeenth day; 600 million on twenty-second day. Drop of temperature after each, reaching normal after twenty-seven days. Seven days later, following increase in diet and permission to get out of bed, a moderately severe relapse started. (Note: This case should be considered as one in which too early increase in feeding caused a relapse in spite of the administration of vaccines.)

No. 71. Male. Positive Widal. After forty-three days continuous fever, given 200 million (followed by a quick drop of 3° F.). On forty-seventh day, given 400 million (causing greater fluctuations, and drop to normal after several days). On the fifty-seventh day given 600 million (after a temporary rise, temperature became permanently subnormal). (Note: Unless due to coincidence, a protracted febrile course was here terminated by vaccines, although the Widal was already positive. Compare Case No. 65.)

No. 77. Male. Positive Widal. On sixteenth day of disease, given 150 million. This was followed by a steady drop to normal on the nineteenth day of the disease. (Note: Unless due to coincidence, the effect of a single dose of vaccine is here strikingly shown.)

Series III. The vaccine for this series was prepared according to the description under "*Preparation.*" Owing to sudden termination of the typhoid epidemic with the colder weather, it was not possible to treat more than sixteen cases in this manner. The total dosage ranged between 850 million and 3350 million[55] (average 1640 million in one to five doses). There were no deaths, no complications, and one relapse. (Case No. 84 developed an eight-day, mild relapse after eighteen days of normal temperature.) The average number of days of fever was 21.6, after the first injection 8.3 days; and after the last injection 3.3 days. The average date of the first injection was on the twelfth day of disease. (The difficulty in securing patients early in the disease has already been commented upon.) In only two cases was vaccination begun before the tenth day (Cases Nos. 93 and 91), and these two showed only fourteen and sixteen days of fever. The Widal reaction or blood culture was positive in all (Widal in fourteen, blood culture in three). As usual, no aggravation was noted after injection and the fleeting rise of temperature, except in two cases (No. 87, diarrhea; No. 91, chilly sensations).

In the sixteen control cases (occurring at the same time) there was one death; one relapse; two complications (hemorrhage and perforation); the average duration of fever was twenty-eight days, and the average date of admission was on the eleventh day of the disease. Thirteen gave positive Widals, and three suggestive.

CASE ABSTRACTS.

No. 84. Male, aged forty-five, farmer. Positive Widal. Very toxic throughout (stuporous). Was probably sick for two weeks before admission. On nineteenth day (?) received 250 million; on twenty-second day, 500 million; on twenty-sixth day, 1000 million; on thirty-second day, 800 million; on thirty-seventh day, 800 million. The last three were followed by drops of the temperature to normal, the last time permanently. Patient improved steadily, but still was mentally dull. After sixteen days normal temperature, began a relapse, which ran a mild course, lasting eight days.

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[55] In 3 cases where a single dose proved sufficient the amount was naturally smaller.

No. 87. Male. Positive Widal. Exhibited a temporary diarrhea and headache after the initial dose of 300 million on the twelfth day of the disease. Given 700 million on fifteenth day and reached normal on same day. After 1000 million on nineteenth day, temperature rose to 99.2 for twelve hours, then remained permanently below normal.

No. 91. Male, Positive Widal. Had chilly sensations and a rise of three degrees in temperature after his only dose of 600 million on the fourteenth day of the disease. His temperature then fell steadily, reaching normal in thirty-six hours, where it remained.

No. 93. Male. Positive Widal. Given 600 million on sixth day; 1000 million on ninth day; 1000 million on twelfth day. But little change after first two doses. After third dose, steady drop of temperature to normal in forty-eight hours, where it remained.

SUMMARY.

Series.	No. of Cases.	No. of Deaths.	No. of Relapses.	No. of Complications.	Average Days of Fever.	Average Days of Fever after First Dose.	Average Days of Fever after Last Dose.	Day of Disease when First Dose Was Given.	Average Total Dose.
1.	44	4	3	12	27.4	13.8	6.3	13.	926 million
2.	33	1(3)	2	5	36.7	16.3	11.3	21.	720 million
3.	16	0	1	0	21.6	8.3	3.3	12.6	1640 million
Total vaccinated	93	5	6	17	25.2	12.8	7	15.5	1095 million
Unvaccinated	170	14	6	24	34.7	—	—	—	—

CONCLUSIONS.

1. The curative use of typhoid vaccines in the course of typhoid fever, in order to stimulate further antibody formation, has a logical theoretical basis, although its mode of action has not as yet been demonstrated experimentally. Practical proof of its value is afforded by the rise in agglutinin curves after such vaccination.

2. The proper use of vaccines in the treatment of typhoid fever has been found in over 1800 cases to be without harm, and usually to be followed by beneficial results. The ninety-three cases reported by us support this view.

3. The best results are obtained if the injections are begun early in the disease, especially before the tenth day. Late in the course of the disease, except in selected cases, the value of vaccine (both theoretically and practically) is more dubious. In the chronic complications of typhoid, such as periostitis and cholecystitis, good results have been obtained from vaccines by other investigators.

4. The contraindications against vaccine treatment of typhoid are not yet clear. We should hesitate to advocate their use in moribund or very toxic cases, during hemorrhages or suspected perforations, or in such complications as pneumonia or otitis where other organisms are involved.

5. The best dosage has also not been determined. Semple, Petrowitch and Watters and Eaton have had good results with small doses; MacArthur, Fletcher and Meakins and Foster equally good results with much larger doses. While this would indicate to some that the true benefit lay elsewhere, we feel that the discordance is due to differences of patients and epidemics, preparation of vaccines, and "personal factors." The dosage must vary within certain limits for each patient and no cut and dried rule should be attempted. The more severe the infection, the smaller and more cautious must be the dosage. With our methods of preparation, we felt that the best initial dose for the average adult was 500 million; if this proved to be the proper amount, two or more larger doses were given usually at three-day intervals.

SALVARSAN IN THE THERAPEUTICS OF CHILDHOOD.

BY THEODORE LE BOUTILLIER, M.D.,
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(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

The treatment of syphilis in children is one of the most important questions under discussion by the pediatrist of the present day and one that deserves widespread attention, as it means not only life and health to the patient but a betterment of future generations.

The old treatment by mercury and the iodids, while giving fair results, frequently leads to serious consequences; for adult patients who have been under this treatment for from four to six years and who have been told that they were cured and could marry, have, to their sorrow, brought into the world syphilitic offspring. The use of the Wassermann reaction now does away with this doubt if the blood examination has been continued for a long enough period of time and the results are continuously negative.

The use of salvarsan or neosalvarsan, while in themselves not always proving a specific in this condition, at least shortens the period of treatment considerably, and when combined with mercury gives, as far as we have been able to determine, a positive cure in practically all cases. While the comparatively short period of time in which it has been employed does not allow us to draw absolute conclusions, it can be stated that where it has been used by competent and careful physicians the results have been uniformly good and that it is now passing beyond the experimental stage.

Opinions differ as to which preparation is the most efficacious as regards results but the latest work seems to point to salvarsan rather than the weaker drug, neosalvarsan; the reasons being that larger doses and a greater number of injections of the latter must be given, while the cost is decidedly more; against this is the fact that frequently the reaction is severe and the danger of serious results, as permanent induration of the tissues and abscess formation (when given intramuscularly), is greater when salvarsan is used, while the preparation of the solution is more difficult and needs more care and skill in its administration. If, however, these points are surmounted, salvarsan appears to be the better drug as the effects are quicker, the results more permanent and the number of injections fewer.

By far the best method of administration is intravenous as it is less painful, more rapid in effect and there is no tendency to infiltration or the formation of an abscess. The veins of the elbow joint are the site of preference; while the gravity method of introducing salvarsan is the most satisfactory. This can be accomplished even in infants if they are not too fat and a small enough needle is used; it should always be done without cutting down upon the vein, which is needlessly painful and a barbarous procedure at best. If it is not possible to puncture the vein it is better medicine to give the injection intramuscularly.

The gluteal region is chosen for the intramuscular injection, care being taken to avoid the sciatic nerve and before removing the needle to inject a few drops of sterile normal salt solution so that none of the salvarsan remains in the needle with the possibility of its being left in the subcutaneous tissues as it is withdrawn, thereby setting up inflammation.

The dose of salvarsan for an infant is from 0.03 to 0.05 grams; when given intramuscularly the solution should be made with a bland sterile oil as the base and the dose repeated in from seven to ten days, after this once a month until the Wassermann reaction remains negative. For a child of five years from 0.1 to 0.2 grams of salvarsan should be used in an alkaline solution for intravenous injection; this being repeated two or more times at intervals of from ten days to two weeks.

The very best results are obtained when the ordinary mercurial treatment is employed between the injections of salvarsan as by this means the effect of the drug upon the disease is increased.

Craig and Collins, in speaking of its use in nervous conditions, mentioned the good results obtained in epileptic children giving positive Wassermann reactions where it has lessened the severity and frequency of the attacks; also of its possible employment in the mentally backward children who are distinctly specific.

In conclusion, we would state that the best results occur when salvarsan is used at the earliest possible moment; that it should never be given unless one or more positive Wassermann reactions have been obtained; that the most rapid effect is produced when given intravenously, the doses being repeated at intervals until negative Wassermann reactions occur; and that the combining the salvarsan with mercurial treatments between doses is more efficacious than the use of salvarsan alone.

SYPHILIS IN CHILDREN.

BY W. C. HOLLOPETER, A.M., M.D.,
Philadelphia.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

The literature of syphilis has grown within the last few years so enormously, especially since Ehrlich's epoch-making discovery, that each day brings out some new phase in the recognition and treatment of this distressing malady. The periodical and society contributions, however, have been largely devoted to the adult manifestation of the disease. With but few exceptions we have been unable to find any reference to the disease as expressed in children in any of our state society contributions for the last ten years. The frequency of syphilis in children, as well as the attitude of the investigator, varies, no doubt, in different cities of the world. Statistics are not always reliable or interesting study and only in comparison with other chronic troubles do they become valuable. Still, of London, cites a report in 1904 of King's County Hospital. Out of 4830 outpatients, where children under ten years are seen and where fully a third are under two years of age, there were only twenty-nine cases of congenital syphilis, *i. e.* less than one per cent. These figures include only cases in which the presence of syphilis was established beyond dispute; but even when doubtful cases are included the proportion is not above one and a half per cent. The statistics of American writers give a somewhat larger percentage. However, such figures furnish us very little idea of the extent to which the inheritance of syphilis damages society; to estimate this it would be necessary to have some record of the number of children who fail to reach live birth, or die very shortly after birth, as the result of the luetic poison. Some idea, perhaps, of this early mortality amongst the children of infected parents, to quote from Dr. Still's article, may be gained from the following figures in which only those stillbirths, miscarriages and early deaths are included which immediately preceded or followed, or formed part of a series immediately preceding or following, the birth of the patient in whose family history they occurred; there were thirty-nine stillbirths, thirty-six miscarriages, and twenty-five deaths attributable to congenital syphilis in the family histories of one hundred children who were under treatment for congenital syphilis; moreover, of these eighty-seven children thirteen died while under observation.

To this large mortality we can add a much larger list of defectives, mentally and physically, which society must accept. In this brief paper I do not wish to include acquired syphilis, which is much rarer than the hereditary type, yet the infection of a child at birth, or early childhood, is not unusual as I have seen several in my service in the Philadelphia General Hospital. The symptoms of congenital syphilis are so well known to you all that it seems to be a work of supererogation for me to outline them ever so briefly before this audience, yet, lest we forget, I feel that the classic writings of Diday, Fournier, Hutchinson, Morrow and Gross still possess all the essentials of the symptomatology of the disease, yet for our day and generation we have grown to see the marks of the beast mirrored in different constitutions, refined and attenuated throughout years of physical and mental culture so that the virus would express a varied picture. It goes without much argument that congenital syphilis is not always recognized at birth. Frequently we find no signs at all during the first weeks of life—none to attract our attention, yet, it is most likely that manifestations are present more often than some writers have implied.

A history of coryza or snuffles from birth is gained very much more frequently when we are looking for it than would be imagined. Still reports eleven per cent. in a service of one hundred, as far as possible consecutive, cases of congenital syphilis under his own observation, and this appears to be substantiated by careful inquiry of others. I am certain that the lesions in the fundus oculi, which are frequent in congenital syphilis, are intrauterine in origin, therefore present at birth. Many cases, possibly two per cent. of the cases I have seen, had eruptive manifestations—the true syphilitic pemphigus, when the child was born. The most embarrassing condition to the physician is the fact that congenital syphilis is frequently delayed in its expression, a fact which is already well known to all syphilographers. I recall the case of a young boy of eight years who came to me suffering from an acute synovitis of the elbow joint; he gave a history of a recent slight traumatism, but no signs of lues were visible or even suspected until he complained of his eyes; an examination, however, revealed an interstitial keratitis, which a course of mercurial treatment soon cleared up.

We have all come to regard "snuffles," however inelegant the term may seem, occurring in a child under three months, as the most constant symptom of inherited syphilis. This type of coryza was undoubtedly present in three fourths of all of my cases, yet I feel that this is a symptom which is very difficult to determine in any particular case, especially during a household epidemic of influenza, and this actually does occur quite frequently in the autumn and winter months in our city. A simple or influenzal coryza giving rise to obstructed respiration is common enough in infants who have absolutely no taint of syphilis. Again, as is well recognized, adenoids are formed very frequently in quite young children, especially those of debilitated parentage, and children thus afflicted frequently have running at the nose and embarrassed respiration. It is a matter of extreme difficulty to make a discriminating diagnosis between adenoidal and syphilitic snuffling in a baby a few weeks old. If congenital syphilis is not recognized by its coryza in a child before the third month this symptom will most probably fail us. My experience has been that the coryza never lasts much longer than six to eight weeks and passes away frequently without treatment. Nasal deformity is the exception.

Laryngitis, shown by a hoarse aphonic cry, in very young children is frequently found both with and without the coryza, and is strongly suggestive of syphilis. I have found it present in many cases without any signs of snuffles. Laryngitis occurs later than coryza; if it occur at all it will be after the third or fourth week. I do not regard laryngitis alone as a valuable diagnostic symptom unless it remain unchanged for some weeks.

An important early symptom which is frequently overlooked in infants under three months is the "pseudoparalysis" of one or more limbs. The youngest child in which I have recognized this condition was four weeks, and the oldest was five months. Still says it was present in eleven per cent. of his cases. This is undoubtedly an acute epiphysitis, which gives rise to the loss of power due to pain upon movement of the affected parts. Unquestionably, cases are seen, in which, although there is apparently no swelling or local pain, we have loss of power and rarely any suppuration and the function is quickly restored under specific treatment.

The formation of craniotabes, a name given to the formation in the skull of small islands of thin bone distant from the sutures, has now been assigned to congenital syphilis. The true etiology of this formation has been arrived at by Lee and Barlow, who found this condition to be due to syphilis in forty-seven per cent. of their cases. I have always regarded craniotabes as an association of rickets, especially in that type of rickets associated with the neurological unbalance known as laryngismus stridulus, and in those particular cases where the stridulus rapidly improved under antirachitic treatment.

It does not seem difficult to recognize the various skin manifestations of tardy hereditary syphilis, yet I am told by my students that this is one of the most difficult symptoms. The skin lesions, slight or diffuse, will be found to be associated with or connected to some mucous membrane; the nose, mouth, anus or vagina, a discrete, brownish, chocolate macule with a tendency toward desquamation. When healed, a smooth parchment-like surface is imparted to the skin; Condylomata result when the rash occurs about the anus; fissures and mucous patches are recognized when it is near the mouth. In very young infants a diffuse thickness of the skin of the soles of the feet and palms of the hands occurs and after desquamation the skin assumes a glossy and shining appearance; this condition of the feet and hands I always look for in every new case brought to me.

Sir Jonathan Hutchinson has the honor of first describing that characteristic deformity of the teeth due to syphilis. He limits this to an expression in the second set of teeth. The first set may not give any evidence of the disease. Hutchinson's teeth stand for faulty development, they may be notched, peg- or screwdriver-shaped. Usually the deformity is limited to the upper incisors and they are frequently separated from their fellows. I have long been observing the teeth of young children, especially those institutionally reared, and have noticed the havoc accomplished by artificial food. It is evident that the teeth share in the general demoralization of the whole digestive tube, and we find all forms of dental decay in the first, as well as in the second dentition. The law that Hutchinson enunciated would seem to have some exceptions. To illustrate by an example in private practice:—

Mrs. S. came to me in 1910 with her sister's child, six months old, and gave me the following history: The sister was forty-one when she died, her first child was born in 1908; stillborn, about seven months; the skin over the whole body was macerated. The second child, 1909, was born alive and lived two weeks; had eruptions or "blisters" all over its body. The third child was born in 1910 and weighed four pounds. The mother died of puerperal septicemia and the living four-pound child was given to the sister who cared for it artificially under my care.

The child had an uneventful career during its four years of existence, no eruptive or infectious diseases. The foster mother was unusually careful in all details by reason of the parental history. Handicapped as we were with a questionable history our effort was to prevent as far as possible any expression of the usual troubles of bottle-fed children. We had but slight evidences of rickets, dentition was slow, the first tooth coming at nine months. When the child was two years old she had ten teeth, four upper and six lower ones. The teeth soon blackened after they were well erupted. The teeth were, in addition to the discoloration, peg-shaped and notched and far separated from each other. The child died suddenly this summer in a convulsion, the third she had had within the last eighteen months. I have no doubt the child would have given a positive Wassermann reaction had I been allowed to make one. The only evidence we had in this case was the family history and the character of the first upper teeth.

Still, of London, cites a typical history of the syphilitic manifestation of Hutchinson teeth in the following note: "A male infant, aged fourteen months, was brought to the Hospital for Sick Children, Great Ormond Street, for screaming and colic. His upper central incisors were both of the typical screwdriver shape, narrower on the margin than at the base and showed at the cutting edge a well-marked shallow crescentic notch, and in addition evidenced that undue separation from one another which is so common in syphilitic teeth."

I do not think that a more characteristic specimen of syphilitic teeth could well be found, for while there was no other evidence of active syphilis in the child, still the following family history was strongly suggestive of luetic taint. Of four pregnancies the first child was stillborn at six months; the second, a premature eight-months' child, which lived nine weeks; the third, a seven-months' child, born deaf and dumb; and the fourth, the patient above mentioned. Small and Colyer in their treatise on "Diseases and Injury of the Teeth" refer to a case recorded by Oakly Coles of peg-shaped teeth in the temporary set which were very characteristic, occurring in a child the mother of whom had long been subject to syphilis. However, referring to the central notch which is seen in the upper central incisors in the permanent teeth in congenital syphilis the same writers point out that it must not be solely relied upon in diagnosis, as it appears to be produced from other causes in the teeth when there is not the slightest taint of congenital lues.

So deeply interested have I become in the manifestation of congenital syphilis in the teeth of children that I have written to a large number of pediatricians throughout the United States as to their views on the subject. They seemed to be uncertain as to the various expressions of deformity in children' teeth, *i. e.*, peg-shaped, separation and notched. Yet the majority were quite convinced that the so-called "Hutchinson teeth" might include both sets. Abt has written up the various abnormalities of the first set of teeth occurring in rachitic children, namely, late eruption, early decay, black and eroded teeth, all of which seem to follow malnutrition and its consequent evils, but no reference is made to syphilitic teeth. This seems to be the common belief and teaching of most of us. It is reasonably certain, however, that the many dental deformities occurring in malnutrition and rachitis have been very confusing to the physician, as he has not recognized the peg-shaped teeth or the marked separation between the teeth simply because they have erupted slowly, or were not erupted at the time the mouth was examined. Hereditary syphilis in children renders them anemic, small of stature and so poorly developed in other ways that the unfavorable conditions thus thrown around them so delay the eruption of the first teeth, that we are often inclined to neglect making a discriminating diagnosis between rachitis and inherited syphilis. Another thought is this: Children with a positive Wassermann reaction between two and three years of age frequently show complete decay of all the upper incisors, thus causing us to think of rachitic destruction of the teeth, which most likely is the true factor, yet the peg shape and the space between the teeth, the true expression of hereditary syphilis, may fail of recognition.

It is my experience that hereditary syphilis is very frequently entirely unrecognized in young children, since they are frequently suffering from some catarrhal or febrile complication that often misleads us, and in this way the true underlying trouble escapes the attention it deserves. It was for this purpose, therefore, that a few of the old classical symptoms were again reviewed lest we should forget them. It would not be within the province of this brief paper to underestimate the great value of the Wassermann test which has rendered us such invaluable aid in diagnosis; yet I feel called upon, as a clinician, to impress upon all physicians the necessity of recognizing a few of the cardinal symptoms before the Wassermann is instituted, inasmuch as the quantity of blood necessary for the test, little as it may seem, is quite a demand on the vitality of a young child, already weakened by disease. I have long felt that if we are successfully to treat our young patients a correct diagnosis must be made before the fourth month, and it will frequently be found that children who are apparently perfectly healthy for the first month of their life may, before the end of the fourth month, reveal some one of the symptoms to which I have directed your attention.

CONCLUSIONS.

We may summarize that

1. The most formidable type of hereditary syphilis may not show up, clinically, in children, until after the fourth or sixth week.
2. Pseudoparalysis is an early and often overlooked symptom occurring between the second and fourth weeks.
3. Craniotabes belongs as frequently to syphilis as to rickets.
4. The Hutchinson teeth may occur in the temporary set.

DISCUSSION.

ON PAPERS OF DRS. LE BOUTILLIER AND HOLLOPETER.

Dr. C. M. Harris, Johnstown: The ophthalmologist has much to guide him in detecting syphilis in the young and masses of statistics are available which serve to impress him with the frequency of the disease if nothing else. Acquired syphilis in children is comparatively infrequent and when encountered will usually be recognized without the aid of the eye surgeon. Hereditary syphilis however is often more difficult of detection and causes lesions in about two per cent. of all cases of ocular disease and is manifested in seventy per cent. of these by interstitial keratitis which is always complicated by inflammatory changes in the uveal tract; in fact not a structure in the eye escapes. The iris, choroid, retina, optic nerve and sclera may be affected without the cornea taking part.

In interstitial keratitis one commonly finds the usual structural defects about the head and face, and both eyes to be involved sooner or later. The early subjective symptoms are photophobia, lacrimation and poor vision. The cornea reveals punctate opacities which later coalesce forming one general opacity with pericorneal vessels coursing through it, becoming so marked in some instances as to cause the so-called "salmon patch." Pain and conjunctival injection are present though not usually pronounced. Prompt treatment carried on for several weeks or months usually brings about a cure with a permanently damaged eye in all its parts, connective tissue proliferation having greatly affected the corneal, ueval and nervous tissues.

When the cornea is not affected, neuroretinal disease may be seen with the ophthalmoscope in the form of a reddish disc, haziness, grayish color of the retina, hemorrhages and swelling. Atrophy may occur later and show a white disc with thin arteries; the vision varying according to the amount of atrophy. Choroiditis exhibits white spots with pigmentation, vitreous opacities and, often, iritic changes.

The crystalline lens is frequently affected and some forms of cataract will demand operative treatment. A slight injury to the eye is sometimes sufficient to precipitate syphilitic manifestation which is very apt to be misleading.

Stieren states that among children having congenital syphilis 80 per cent. are found to have ocular disease and most often interstitial keratitis. One author reports that of fifty children of proven syphilitic parentage 36 per cent. had ocular syphilis and in the same fifty children 27.7 per cent. had strabismus. In children of definite hereditary syphilitic history and in those giving unmistakable clinical ocular symptoms the Wassermann reaction has been positive in 50 to 60 per cent. of cases and much higher in those having oculomotor palsy.

The rhinologist observes that hereditary lues usually exhibits itself during the first two months of life, but may appear any time previous to puberty.

Snuffles, due to inflammation of the mucous tissues, with increased secretion, are among the first symptoms; later, ulcers and crusts appear in the nose and throat with fissures at the mucocutaneous junctions, bony necrosis, and coincident deafness. Malnutrition results from poor respiration, inability to nurse and toxicity.

The larynx is sometimes affected although usually secondary to tissue changes above. In acquired syphilis the primary sore may be stationed on the lip, nasal alæ, tonsil, adjacent mucous surfaces and may be classical in nature or a nonindurated papule; both giving rise to the usual secondaries comprising erythema, coryza, condylomata, ulceration, glandular involvement, etc. Any persistent ulcer in the upper respiratory tract should be duly suspected.

The oculist does not find salvarsan necessary to the cure of all hereditary lesions and obtains good results in many cases by the use of mercury, iodids and various tonics, not neglecting thyroid gland. Intractable cases do appear and are usually quickly subdued by the arsenical preparation supplemented by the drugs mentioned.

The rhinologist probably more often uses salvarsan on account of its rapid action which saves much nonresistant tissue.

DR. GEORGE B. KLUMP, Williamsport: Use of mercurials and iodids must not be forgotten. While the value of salvarsan and neosalvarsan is recognized, they are at present very difficult to procure and the mercurials and iodids have proven of real value.

Hutchinson's teeth, so-called, are not alone sufficient to make a diagnosis as the same condition of teeth occurs from gastrointestinal disorders. In any case, we will usually find other evidences, as glandular involvement, skin lesions or some other evidence. Where possible the benefit of the Wassermann test should be had, but in the smaller communities this is sometimes impossible to secure.

DR. JOHN A. KOLMER, Philadelphia: The Wassermann reaction as performed with an antigen reenforced with cholesterin becomes one of the most delicate symptoms of syphilis, either congenital or acquired. In cases of hereditary syphilis in which the patient is one year or more of age, the reaction is positive in over ninety-seven per cent. I would also draw attention to the fact that the Wassermann reaction has shown that Colles' law is erroneous, and that an apparently healthy mother of a syphilitic child is actually infected with syphilis. Also Profeta's law, regarding a syphilitic mother unable to infect her apparently healthy child, has likewise been shown to be erroneous, as many of these children are cases of retarded congenital syphilis. In all instances a Wassermann reaction should be made of mother and child and treatment instituted, even though there are no symptoms.

The luetin reaction is occasionally positive in congenital syphilis in the presence of a weak or indefinite Wassermann reaction and symptomatology. Both a luetin and Wassermann reaction should be performed before syphilis may be excluded.

I wish to add that in the treatment of syphilis my colleague, Dr. J. F. Schamberg, has used with success, a suspension of one tenth gram salvarsan in one cubic centimeter of a bland oil, as albolene, plus a minute portion of creosote to allay pain. This therapy may be used when the child is too small for intravenous therapy.

DR. H. G. WERTHEIMER, Pittsburgh: Much to my surprise, in a very recent publication, I find that syphilis *per se*, is a rare cause of abortions, constituting a very, very small percentage, less than one per cent.

The rash and other signs are certainly conclusive. A zig-zag line (result of scars) at the junction of the vermillion border of the lip and mucous membrane is very suggestive, and with saddle nose is positive for congenital syphilis. Enlarged cubital glands are seldom encountered in any other disease up to the sixth month of age, although other diseases as scarlet fever and rickets, may give this enlargement, this occurring later on.

Perichondritis and fractures are likewise found as the result of congenital syphilis.

Upon Hutchinson's teeth alone, I do not believe a positive diagnosis should be made, as other causes may bring about the same kind of teeth. I have never seen these teeth in the temporary set, and this may be explained by the view held by Hocksinger of Vienna, that abortions usually are the result.

ASSIMILATION OF CALCIUM PHOSPHATE.

Extensive experiments have demonstrated the availability of calcium phosphate for the bone formation of growing infants. This is a further proof of the power of the human organism to utilize inorganic substances.—*Jour. A. M. A.*, Aug. 15, 1914, p. 581.

APPENDICITIS AS SEEN BY THE INTERNIST. REPORT BASED UPON ABOUT 700 CASES.

BY JOHN A. LICHTY, M.D.,
Pittsburgh.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Appendicitis is a disease which should always be considered from a surgical standpoint unless there are strong indications to the contrary. Any physician who does not consider the advisability of prompt surgical treatment for that condition of the appendix which Fitz described in 1886 might be considered as doubtful of his own diagnostic ability or as unwilling to follow the safe and sound principles advocated by men of large and successful experiences. In fact the profession and with it the laity has been so thoroughly convinced of the surgical aspect of appendicitis that the internist is frequently not consulted. It is rare now that one hears a paper upon appendicitis from the standpoint of the internist. The whole subject seems to be surgical. Whether the swing of the pendulum to this great extreme is for the best welfare of the community at large and for the profession in particular might sometimes be justly questioned. So many other conditions, pathological or merely functional, in the abdomen may to a degree simulate the symptoms of appendicitis so closely that unless one is conscientiously careful he may misinterpret the symptoms. The patient is a frightened willing victim. The operation is safe; almost no mortality. The appendix is slipped out through a buttonhole incision; all symptoms subside, whether it is appendicitis or not, on account of the postoperative treatment—enforced rest and withholding of food. After all is over, including the financial adjustment, the patient, unfortunately, occasionally finds his condition no better or probably worse than before the operation.

It is largely for these reasons I have undertaken to present a brief report of my experience with appendicitis as it has occurred in my practice during the past twenty years. Aside from the usual clinical classification of appendicitis into acute and chronic, I have classified my cases as those patients operated on and those not operated on; again subdividing as seemed necessary. The placing of a case into one or the other group was naturally not always under my control, as the patient usually, after an opinion had been given, took the privilege of deciding for himself whether he would be operated on or not. Of the 658 cases of which we have records, 299 of the patients were operated on and 359 have still not been operated on, so far as we know. We have made every effort to keep ourselves informed of the subsequent histories of all cases. The cases in which the patients were operated on are further divided into (1) acute, (2) interval, (3) chronic, without other pathology, and (4) incidental or chronic with other pathology. Of those in which operation was not done very few were acute. I do not recall a single patient with acute symptoms who refused operation after he was told by the surgeon or myself that an operation was imperative.

The symptoms and signs insisted upon before a case was assigned to one or other of the above classes are as follows:—

1. *Acute Cases.* (*a*) Severe pain or cramps in the epigastrium of rather sudden onset. (*b*) The slightest increase of pulse rate and elevation of temperature. (*c*) Definite tenderness in the vicinity of McBurney's point, elicited sooner or later after the onset of the attack. (*d*) The slightest increase of the leukocytes. We did not insist upon nausea and vomiting, because of their frequency in so many other conditions, nor upon a certain degree of rigidity of the right rectus. But we rather insisted upon all of the above named points. The slightest increase of the pulse rate and especially of the temperature we found very significant. We are aware of the differences of opinion as to the value of leukocyte counts in acute appendicitis, but our experience has been such as to make this an almost invaluable aid for the early diagnosis. As with taking of pulse rate and temperature, so with the leukocyte count, it must be done early and frequently to be of any value. A leukocyte count of 7000 which in a few hours

goes to 10,000, and in two hours later to 12,000 or 15,000, especially if the increase is largely of the polynuclears, we consider of great significance. Fear and apprehension will increase a pulse rate and may cause a slight elevation of temperature, but they will not increase the polymorphonuclear leukocytes. Counting the leukocytes did not interfere any more with the preparation for early operation than did taking the pulse or temperature. With no patient did we find we had waited too long if the operation had been deferred until the above symptoms appeared, and on the other hand whenever these symptoms and conditions were present and an operation done, the pathology revealed seemed to have justified the procedure.

LEUKOCYTE COUNT—23 ACUTE CASES.

Leukocytes.	No.Cases.	Temperature.		Pathology.	
Below 10,000	2	Normal		Gangrenous	2
10,000 to 14,000	5	Subnormal	1	Early acute	2
		Normal	1	Gangrenous	1
		100 degrees	1	Empyema	1
		101 degrees	1		
14,000 to 18,000	5	99 degrees	1	Early acute	2
		100 degrees	2	Gangrenous	1
		101 degrees	1	Abscess	1
				Empyema	1
18,000 to 22,000	9	Normal	4	Early acute	2
		99 degrees	1	Gangrenous	5
		103 degrees	2	Abscess	2
Over 22,000	2	102 degrees	2	Early acute	1
				Gangrenous	1

2. *Interval Cases.* Those in which the patients were operated on soon after an acute attack which we had either attended personally or of which we had very definite knowledge. The acute symptoms had usually all subsided.

3. *Chronic Cases.* These were such as gave a rather definite history of previous attacks and the patients had symptoms referred to the right lower abdomen. They also frequently had obscure digestive disturbances which could not be explained by any other pathology. The so-called hyperchlorhydria was a frequent condition. Every effort was made before operation to exclude other conditions which might be mistaken for chronic appendicitis. Among these are gall-bladder and duct disease, gastric and duodenal ulcer, conditions in the right kidney and ureter, diseases of the pelvic appendages, chronic conditions of the colon, acute inflammatory conditions of the chest, and certain well-known neuroses.

4. *Incidental* or *Chronic with Other Pathology.* These were cases in which the patients were operated on for some other pathological condition, and an unsuspected chronic appendicitis was found. It was rare that a normal appendix was removed. We are about convinced that it is as difficult to judge of the pathology of the appendix *in situ* as it is of the pathology of the pancreas, before removal.

The cases in which the patients were not operated on for obvious reasons we could not well classify. As was said before very few were acute cases. A number of the patients were such as delayed consulting a physician early and in whom it was thought safer to wait for an interval operation. When they recovered from the attack, they congratulated themselves on this recovery and decided to chance another attack before consenting to an operation. Some of these, while they have not had a recurrence of acute attacks, have led miserable existences, and others have seemed perfectly well. A great number of the patients not operated on are such as have indefinite symptoms, and we could not imperatively demand an operation. The number of cases in which operation is not performed will of course be reduced as recurrent attacks occur or as the diagnosis becomes more definite or as other methods of treatment fail.

While appendicitis is unquestionably a surgical condition there is after all a "medical" care which is of the greatest importance. Neglecting this in acute cases may do more to raise the mortality of appendicitis than poor or bungling surgery will do. The care to which we refer is that of leaving the patient alone: No food or medicine by mouth, no cathartics, no enemas; under the rarest circumstances will a hypodermic of morphin be necessary; absolute rest in bed; ice to the abdomen if desired. It would be better to take one's chances with acute appendicitis on a desert island with such treatment than with meddlesome "medical treatment" followed by an operation done by an inexperienced surgeon in the best equipped operating room imaginable.

The results in the treatment of our cases will have reference only to the patients operated on. Of those, either acute or chronic, in which there was no operation none of the patients have died. Some seem well, others are in various states of physical health. It is to be regretted that in hospital reports and in medical literature the kind and extent of cure of appendicitis is often not definitely specified. If the patient recovers from the operation and is physically able to leave the hospital, he is marked "cured" whether he is well or not. If we took this privilege in recording the results of our cases in which there is no operation we might truthfully say all are "cured" because they are physically able to leave any hospital.

Of the 299 cases, 51 acute and 248 chronic, in which operations were performed, eight of the patients died. In four of these, two acute and two chronic, operation was primarily for appendicitis, and in four for other conditions, the appendix being removed incidentally. The following is a brief epitome of the eight fatal cases.

1. Mrs. O. January, 1903: Seen in consultation two weeks after onset of acute attack. Perityphlitic abscess which was drained. Later subphrenic abscess which was extensively drained. Finally general septicemia and death.

2. Miss A. October, 1905: Acute attack at night. Perforation the following day, just before operation. Double pneumonia on fifth day, which was rapidly fatal.

3. Mrs. S. October, 1905: Chronic appendicitis. Old sinus was found between the tip of the appendix and the cecum. Fatal hemorrhage from bowel into the wound on fifth day. Cause of hemorrhage not known.

4. Mrs. P. June, 1910: Cholecystitis and chronic appendicitis. Gall bladder drained and appendix removed. Patient had acute dilatation of the stomach and died on the fifth day.

5. Miss T. March, 1912: Operated on for uterine fibroid and appendix removed. Chronic advanced pulmonary tuberculosis. Pneumonia. Death.

6. Mr. M. September, 1911: Operated on for gallstone, and appendix removed. Died of pulmonary embolism on the fifth day.

7. Miss L. 1909: Operated on in Buffalo, New York, for appendicitis. Diagnosis of chronic appendicitis had been made by us several months before the fatal attack. Patient died soon after operation. No particulars.

8. Mr. F. P. October, 1913: Was operated on for pyloric stenosis. Ulcer found in pylorus which had perforated and was attached to head of pancreas. Chronic appendicitis. Pylorectomy, gastrojejunostomy and appendectomy. Shortly after operation pancreatic secretion flowed from the drainage tube and the patient died on the fifth day.

We feel that a report of this kind could not be complete without giving the end results of those in which patients were operated on and are still living. This has been difficult to do, because many of the patients have passed from our observation. A number of letters were sent to those who had not reported in recent years. The results are rather gratifying. In the acute cases all of the patients are well. Of the 248 chronic cases in which operation was performed, 126 patients, or fifty per cent., reported satisfactory results; twenty-three, or about ten per cent., that the operation had no effect whatever upon the symptoms of which they complained; while forty-one, or about sixteen per cent., reported unsatisfactory results. From fifty-two no report could be obtained. Six died. In a number of the unsatisfactory cases the patients have already had two or more operations, such as for movable kidney, for adhesions, Lane's kink, and for the various ptoses. We can readily understand how these unfortunates would gradually gravitate towards a clinic which offers such hopes as Sir Arbuthnot Lane promises at his clinic at Guys Hospital.

RESULTS: CHRONIC APPENDICITIS—248 CASES.

	Males.	Females.	Total.
Satisfactory	47	79	126
Indifferent	10	13	23
Unsatisfactory	14	27	41
Death	2	4	6
No report			52
Total			248

Nothing has given us more satisfaction than to find that but one patient died from operation because it was undertaken too late; that of the cases in which no operation was performed, none of the patients died, and none had to be abandoned surgically on account of a supposed hopeless condition. In the course of the tabulation of our cases many interesting points were brought out which are represented in the following tables, elaborated by Dr. E. W. zur Horst.

APPENDICITIS.

Total Cases, 658. Operated on, 299. Not Operated on, 359.

Cases Operated On.

Acute, 51	Male 36, 71%	Female 15, 29%
Chronic, 248	Male 85, 34%	Female 163, 66%

AGE.

	Acute.		*Chronic.*	
	Male.	Female.	Male.	Female.
Below 20	7	0	4	11
20 to 29	8	6	28	52
30 to 39	6	6	24	57
40 to 49	9	3	20	21
Over 50	3	0	6	11
	Average 32 yr. Youngest, 9 yr. Oldest, 57 yr.		Av. male 33.6 yr. Female, 33.4 yr. Youngest, 9 1-2 yr. Oldest 61 yr.	

GASTRIC ANALYSIS.

	Achlorhydria.	Total H Cl.			
		Below 20	20-39	40-59	Over 60
Male..	2	6	13	22	25
Female	5	8	27	34	20
Total	7	14	40	56	45

Total hydrochloric acid over 30, 81%.

PATHOLOGY—(GROSS).

Acute.

	Male.	Female.	Total.
Gangrenous	10	2	12
Abscess	4	4	8
Diffuse Peritonitis	4	2	6
Total	36	15	51

Chronic.

	Male.	Female.	Total.
Total	85	163	248
Obliterative	8	26	34

The impressions which this review suggests might be summed up as follows:—

1. A close coöperation of physician and surgeon is necessary to obtain the best results.

2. Since only eight patients out of about 700, under all conditions and circumstances, died, the disease need not be considered with such alarm.

3. An early operation during the first acute attack, is not only safest but will likely prevent a life of more or less chronic invalidism.

4. A careful routine study of the leukocytes in acute appendicitis is of diagnostic value.

5. A routine study of the gastric secretion in chronic appendicitis yields valuable information.

6. The end results in cases of chronic appendicitis are often unsatisfactory and can not be definitely foretold.

I wish to take this opportunity to thank those surgeons who have so ably coöperated in the care of the cases reported, and also to thank my associates and assistants who have made it possible to bring about this collaboration.

DISCUSSION.

Dr. M. H. Fussell, Philadelphia: As years pass my opinion of the value of operation in every case of appendicitis in which there are no contraindications to an operation is more fixed as to its lifesaving value. But for fear my subsequent remarks may be read to mean that every abdominal pain demands operation, let me precede this discussion by briefly stating the contraindications to abdominal operation. These are: (1) A lax or badly considered diagnosis. Every case must be rigidly differentiated and, while diagnostic laparotomies are permissible under certain circumstances, they are not to be used as a routine method of diagnosis. (2) An inexperienced operator is always a strong contraindication for a laparotomy. Better trust to the forces of nature, than meddle by a man who is not expert. (3) Improper surroundings are as a rule a strong contraindication. (4) In certain physical conditions of the patient, the certain added shock of an operation is more dangerous than the probable one from appendicitis itself.

Dr. Lichty says, "Appendicitis is a disease which should always be considered from a surgical aspect unless there are strong indications to the contrary." I should amend this statement by saying that appendicitis should always be considered from a surgical aspect. A careful differential diagnosis should be made and if the condition present is the result of an appendicitis, an operation should be performed unless there are strong indications to the contrary. Dr. Lichty also says "it is rare now that one hears a paper upon appendicitis from the standpoint of the internist. The whole subject seems to be surgical." I believe the whole subject is surgical; that primarily appendicitis as a surgical disease is entirely beyond the help of any drugs, and is only modified by other medical means, but that in appendicitis, like all other surgical conditions, both the internist and the surgeon should work shoulder to shoulder for the benefit of the patient. A surgeon is not always as good a judge of the condition of the patient as is the internist and unquestionably the internist is not always as good a judge as to the necessity of the operation as is a surgeon. Therefore, every patient with appendicitis should have the combined opinions of internist and surgeon if his best interests are to be consulted.

Dr. Lichty's statistics of 658 cases, 299 being operated upon and 359 not operated upon, with a mortality of about one per cent. go to prove a contention long held by many, among whom I include myself, that the great majority of cases of appendicitis would get, at least, partially well without operation, but I wish to hasten to say that this is a dangerous fact with which to becloud our minds, because in the majority of cases no one can tell in the beginning whether in a case of appendicitis the patient will recover without operation and there are no symptoms or signs which in every case will surely distinguish between those which demand operation to save life and those in which the patient might get well without an operation until it is too late to operate. Therefore, given a case of appendicitis in which the symptoms are due to appendicitis and in which there are no complicating circumstances contraindicating an operation, an operation should always be performed.

I believe the symptoms outlined by Dr. Lichty in the majority of cases mean acute appendicitis. And yet in certain gall-bladder cases, certain cases of gastric ulcer, of extrauterine pregnancy, pneumonia, and pericarditis the patients may have the same symptoms.

I believe fully in the great value of a leukocyte count. For while it is true that in certain cases the patient may have a practically normal leukocyte count and yet have a severe form of appendicitis, this is by no means the rule and given the signs of acute abdominal pain with a leukocytosis we are fairly certain at least of some intraäbdominal inflammation and certain functional conditions.

I fully agree with Dr. Lichty that the first treatment by the man who sees a case of appendicitis, and he is usually a medical man, has much to do with the final outcome of a case. No food, no medicine, no cathartics, but occasionally morphin, will often save the patients in acute cases from severe complications. Therefore, the sooner every practicing physician recognizes that his duties are about as follows, the sooner the mortality of appendicitis is going to become nil. These duties are the recognition that indigestion, abdominal pain, abdominal tenderness, fever, leukocytosis, mean an inflammatory condition in the abdominal cavity and the more strictly the patient is left alone and the sooner the patient is operated on, that much more surely he will get well. This means, of course, that a differential diagnosis has been made and we are not considering pneumonia, pericarditis or any other extraäbdominal condition as an abdominal condition.

Dr. Lichty's contention that it is a mistake to consider a patient cured simply because he is well over an operation is well taken, but here again comes in the fact in most all cases in which the patient is not well, a careful differential diagnosis has not been made.

In regard to Dr. Lichty's eight mortalities in operative cases: Cases 1 and 2 are a glaring example of the danger of waiting for an operation in acute appendicitis. Cases 3 and 7 might possibly also be classed with them because there probably was an acute attack either recognized or unrecognized before the fatal outcome. Indeed it is just these serious complications in chronic cases which make of value the admonition to operate in all cases of appendicitis, other things being equal. Case 4 can scarcely be called a case of appendicitis because the appendix was simply removed as a safeguard. Same can be said of Cases 5, 6 and 8.

With Dr. Lichty's second count to his conclusion I can scarcely agree. I believe appendicitis should always be viewed with alarm. Perhaps alarm is scarcely the word. A doctor has no call to be alarmed under any combination of circumstances. However, appendicitis means a pathological condition in the patient's body, which may cause death, or from which the patient may recover. I repeat that no physician, no surgeon can surely tell whether a patient will recover or die without operation. It is a proven fact that operation, *per se*, is of extremely slight mortality. Therefore, delay is dangerous. Prompt operation offers the surest means of escaping death or semi-invalidism.

Dr. J. J. Buchanan, Pittsburgh: I am pleased to discuss Dr. Lichty's paper because I am personally cognizant of the accuracy of his records.

As a matter of historical interest I call attention to the fact that the recognition of the appendix as the site of a primary inflammation occurred long before the year 1824, the date assigned by Dr. Lichty.

Lawrence Heister, in his "Medical, Chirurgical and Anatomical Observations," the English edition of which was published in 1755, records "an abscess in the vermiform process of the cecum," which he discovered in his dissection of the body of a malefactor of which he was making a public demonstration in the Theater at Altdorff in 1711.

If you will bear with me for a moment I will read you the exact words of Lawrence Heister: "I found the small guts very red and inflamed in several places. But, when I was about to demonstrate the situation of the great guts, I found the vermiform process of the cecum preternaturally black, adhering closer to the peritoneum than usual. As I now was about to separate it, by gently pulling it asunder, the membranes of this process broke, notwithstanding the body was quite fresh and discharge two or three spoonfuls of matter." This instance may stand as a proof of the possibility of inflammations arising, and abscesses forming, in the appendicula as well as in other parts of the body, which I have not observed to be much noticed by other writers; and when, in practice, we meet with a burning and pain where this part is situated, we ought to give attention to it.

I would like to call attention especially to Dr. Lichty's statement that in not one of his cases of acute appendicitis was operation refused when he had informed the patient that operation was imperative. I wish every general practitioner had the same ability not only to diagnose his cases of acute appendicitis, but had the courage of his convictions to enable him to put the case so positively that the patient would be convinced that an operation should be done and done at once. I believe that in nearly every case where the patient refuses to accept an operation it is because he is left in doubt as to whether the indication is perfectly clear. If the attending physician is not sure of his diagnosis the patient is very quick to discover it.

I am glad that Dr. Lichty has given such a small number of symptoms requisite for a diagnosis of acute appendicitis. If I were to make any change in this list I would drop from it the increase of leukocytes; not that I think that this is not a valuable sign, but because I believe it is sometimes absent. This is shown by the fact that Dr. Lichty has referred to two gangrenous cases with a leukocytosis of less than ten thousand. I agree also with Dr. Lichty that injudicious medical treatment, especially by catharsis, will do more to raise the mortality of appendicitis than poor surgery or no medical care whatever.

I have been stimulated by Dr. Lichty's paper to look up the facts concerning the last thousand cases in my operative record which appear under the title of appendicitis. I find on examining them critically that there were 291 cases of acute appendicitis with three deaths, a trifle over one per cent.; 424 cases of chronic appendicitis without mortality; 180 cases of appendiceal abscess with 14 deaths, 7¾ per cent. mortality; 40 cases in which the appendix was removed in the course of other operations without mortality; 3 cases in which the appendix was not positively identified, all recovered; 2 cases of tubercular appendicitis, both recovered; 1 fatal case of gangrene of the colon; 2 cases of mistaken diagnosis in which the pathological condition was not discovered, and the appendix was removed as the only thing in sight, both patients died. In this group of a thousand consecutive cases 29 died, a general mortality of 2.9 per cent.

In the course of this investigation I found that seventy-four of these cases were Dr. Lichty's and I am happy to state that they all recovered and for the very good reason that the condition in which they were brought for operation was favorable. Of Dr. Lichty's seventy-four cases only two were suppurative and their abscesses were well developed before they came under Dr. Lichty's observation

Looking at this whole matter as we are now doing from the medical side, I think we may say that if 715 acute and chronic cases of appendicitis can be operated on with the loss of but three cases, a mortality of four-tenths of one per cent., and, if in the same series 239 cases which have gone on to abscess or to peritonitis have a mortality of ten per cent., then there is great responsibility incurred by the physicians, who should instruct their patients in the possible gravity of every colic and the danger of purgation, and they themselves, should see to it that all their acute appendicitis cases should be operated at the earliest possible stage.

Dr. Ernest Laplace, Philadelphia: There are no regular symptoms for appendicitis because there are various causes for appendicitis. Hence we must operate as soon as serious trouble is suspected, so as to have no mortality, as the operation in itself is innocent.

Dr. Lichty, closing: I wish to interpret my remark. "viewed with alarm": If an acute case is recognized early and operation performed, the patient will recover. There is no necessity for alarm. I have used the term more to cover those cases in which the patients have obscure pain in the abdomen, of a chronic nature, and are picked up by a surgeon without any study, told an operation must be done to save life; a button hole incision is made and there is slipped out probably a normal appendix, leaving other unrecognized pathology. The symptoms of course continue and the alarm excited did more harm than good.

In reply to Dr. Buchanan's question I will say that so far as we know in all our acute cases in which operation was performed the patients are well. Now as to the association of symptoms, pathology and bacteriology: So long as the abdominal wall lies intact between the clinician or surgeon and the diseased appendix its exact condition is not known. We can only say we have a surgical condition and it needs surgical procedure. No surgeon so far as I know has given us any light on this subject of correlating symptoms with pathology prior to the operation. As to the leukocyte count, it is not a pathognomonic sign, but it is a demonstrable safe guide to show that the condition present is more than an ordinary "indigestion" of an acute type. It will lead to the bringing of the acute cases earlier to the surgeon and thus prevent a fatality or a chronic invalidism.

APPENDICEAL DYSPEPSIA.

BY JOHN J. GILBRIDE, A.M., M.D.,

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(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The rôle of a diseased appendix as the cause of chronic dyspepsia has within the past few years broadened out considerably. The statements made by pioneers in this field seemed at first a little radical for those of us of tender sensibilities. However, clinical experience has conclusively demonstrated the truth of those statements that many cases of simulated upper abdominal disease, particularly so-called gastric disease, was really due to a chronically diseased appendix. As we have known for some time the mimicry of gastric symptoms by appendiceal disease, we now believe that not a little of the pathology found in the upper abdomen is also probably due to a diseased appendix. The association of a diseased appendix with gastric and duodenal ulcer and disease of the biliary passages makes it seem to be more than a coincidence.

While the disease is most common in early adult and middle life, still I believe that many of the so-called cases of indigestion in children are due to chronic appendicitis.

The symptomatology of chronic appendicitis varies greatly. Pain is most frequently complained of, also fullness and distress; occasionally vomiting, pyrosis, and regurgitation of sour or bitter gastric contents. The bowels are constipated in about one half the number of cases, occasionally there is constipation alternating with diarrhea. Pain varying in degree is the prominent symptom in these cases. Some patients complain only of a sense of discomfort in the abdomen, intestinal flatulence or fullness. The pain is usually intermittent, frequently colicky, and I should say occurs about equally as frequent in the lower abdomen as in the upper abdomen more particularly in the epigastrium.

In the series[1] that I have studied pain occurred slightly more frequently in the lower abdomen as against the epigastrium; or, in exact numbers, eighty-two for the latter as against ninety-eight for the former. The pain is irregular in time of onset and duration. In over one half of the cases the pain does not bear any relation to the taking of food. In about sixteen per cent. of cases pain in the abdomen begins within an hour after eating. In about five per cent. of cases, pain is worse between one and two hours after eating. In three per cent. of cases pain begins between two and four hours after eating. In from three to four per cent. the pain is occasionally relieved by food.

Pain may be referred to the pelvis, and in women or young girls it sometimes occurs only at the menstrual period. When a patient whose menstruation has been normal has had an attack of appendicitis which apparently subsided and the patient subsequently has pain during the menstrual period, the pain is probably due to a diseased appendix. In other cases the bladder symptoms may be quite marked. As an illustration:—

Mrs. B., white, married, no pregnancy, aged thirty-eight years, complained off and on for nearly four years of intermittent cramp-like pain in lower abdomen and frequent and painful micturition. Physical examination was negative except a tender and palpable appendix. Urinary examination from ureteral catheterization was negative, but the cystoscopist reported that there was a bright red area the size of a ten cent piece in the posterior wall and on the right side of the bladder. She had been receiving gynecologic treatment at one of the hospitals for over six months. The bladder had also been treated by irrigation and local medication.

Notwithstanding the reports on the bladder, I believed all the symptoms were due to a diseased appendix. I advised operation, but the patient did not consent for several months. However, on February 1, 1911, I performed an appendectomy upon her at the Methodist Hospital, and she has been perfectly well ever since. The appendix showed evidence of chronic inflammation and contained a fecal concretion.

A noteworthy feature of these cases is the periodical exacerbation of the symptoms, and the number of patients that give a history of definite recurrent attacks varies considerably. The severity of exacerbations of symptoms also varies greatly and many patients do not have what one might call an attack of appendicitis, but they have symptoms of indigestion which may be slightly increased at times and associated with a tender and in some instances palpable appendix.

Hematemesis has been met with a number of times in which there was no demonstrable lesion of the stomach, and in which it was attributed to a diseased appendix.

I have a number of times seen patients whose history suggested upper abdominal disease, without any history or local signs or symptoms suggestive of appendicitis, subsequently during an exacerbation of the symptoms, show unmistakable local signs of appendiceal disease. It happens frequently that patients with a history of long-standing upper abdominal disease come to operation for an acute attack of appendicitis and are entirely cured of their symptoms by the operation.

Most any one can diagnose those cases of chronic appendicitis with recurrent attacks. In the atypical cases, the better the diagnoses, the better the result. A patient with visceroptosis who incidentally has a tender appendix will not be cured by removal of the appendix. These cases of cardiorenal, or vascular disease with a tender appendix will not be cured by removal of the appendix.

We all know the effect of infection on the kidneys in some cases of acute appendicitis with its accompanying urinary changes, of the presence of albumin, perhaps a few casts and renal cells, and how this clears up after removal of the appendix, or infected gall bladder, as the case may be. Babcock of Chicago pointed out the effect of infection of the gall bladder on the heart. The same may be true of these long-standing foci of infection in chronic appendicitis. We do not know the effect of long-standing neglected, so-called latent infection of the appendix on other organs, as the biliary apparatus and pancreas. We know nothing of the etiology of diabetes with its metabolic disturbance and chemical changes, or whether infection plays a rôle.

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[1] 280 cases from the clinic for Dis. of Stom. and Intes., Phila. Polyclinic, formerly under Dr. Jos. Sailer, now under Dr. Farr.

When there is reason to believe that gastric symptoms are due to chronic appendicitis, operation should be advised in the plainer cases. A thorough trial of medical treatment should be instituted in the obscure cases before operation is decided upon. If this course is not followed the patient may be one not relieved by operation and who must then receive medical treatment which should have been given before the operation. Even in some of the chronic cases which have been operated upon recovery and disappearance of symptoms do not occur immediately, but only after medical treatment with attention to diet, etc.

Many cases of supposed gastric or duodenal ulcer are cases of latent appendicitis, and in all operations for supposed gastric and duodenal ulcer the condition of the appendix should be carefully investigated, as one is not justified in doing a gastrojejunostomy in the absence of a demonstrable lesion of the stomach or duodenum. Disease of the gall bladder, loose right kidney, and stone in the right kidney and ureter should be excluded. Analysis of gastric contents, a blood count, tests for occult blood in feces, and *x*-ray examination may be necessary in some cases.

The cases that are followed by the best results after operation are those which have had a history of acute attacks of this disease, although not a few of those cases already mentioned, that is, cases of dyspepsia with negative findings, except a tender appendix, give brilliant results.

DISCUSSION.

Dr. Ernest Laplace, Philadelphia: Lane's kink exists in the majority of cases of chronic appendicitis. This causes intestinal stasis which results in irritation of the upper intestinal tract accounting for the dyspepsia and symptoms of duodenal ulcer. If symptoms are not relieved after the removal of the appendix, it is probable that a Lane kink has not been recognized. Hence, when operating for stomach symptoms referable to the appendix, should the trouble not be found there, we should explore the intestinal tract for adhesions or kinks.

THE CORRELATION OF APPENDICITIS AND OTHER ABDOMINAL AFFECTIONS.

BY LEVI JAY HAMMOND, M.D.,
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(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

Aided by abundant clinical evidence we must conclude that the frequency of the coexistence of abdominal inflammations with appendicitis is more than a mere coincidence. Indeed there seems convincing proof of the frequency with which disease in even remote organs is directly dependent upon primary infection of the appendix. A critical analysis of the finding in 920 operations at the clinic of the Methodist Episcopal Hospital, Philadelphia, where the signs and symptoms of appendicitis indicated primary involvement of the appendix, and where analogous disease existed in the various organs of the abdomen at times remote, would seem to indicate that the existence of the appendix establishes and maintains an important anatomic and physiologic relation to the remainder of the digestive system. It can not from either of these viewpoints be considered indefinitely or potentially, but infinitely and actually as a specialized and functionating organ, intimately blending with the remainder of the digestive tract. Its principal characteristic is lymphoid tissue, which is collected together in this specialized differentiated portion of the intestinal canal.

E. M. Corner says nature has made use of a disappearing structure and endowed it with a secondary function by giving it lymphoid tissue to protect the body against the microorganisms abundantly present in the ileocecal region. One property of lymphoid tissue is to produce leukocytes, and in healthy appendices the phagocytic action of the leukocytes in this part of the intestines is obviously of great value in destroying the excess of bacteria that accumulate in the caput coli, and it is only after the sclerosed appendix has impaired or destroyed the function of the lymphoid tissue that recurrent acute attacks develop, the disease being enterogenetic in origin, and as a rule is a slow process resulting from stasis of the intestinal contents in the cecum.

It is universally accepted as true that appendicitis is essentially a chronic disease and in these chronic fibrosed appendices we find disappearance of the lymphoid tissue and impairment of the muscular action of the organ, with marked intestinal derangement. In considering the development and life history of this organ we are impressed with the fact that a well-defined appendix is found only in the anthropoid ape, lemur and the opossum. It is longest and thickest between the ages of ten and thirty, and the frequency of disease is greatest between the ages of ten and twenty. As to its demonstrable anatomic relation with other abdominal organs, I would especially refer to that of the mesoappendix and the ovary by a peritoneal fold extending directly from the former to the latter. This relationship between these organs explains their coëxisting diseases, and the frequent association of the appendix and adnexal disease, such as adhesions between the appendix and fallopian tube when either is primarily affected. The spreading of the infection to the pelvic fascia and fallopian tubes, resulting in pyosalpinx, parametric inflammations and septic abscesses in Douglas pouch, were not uncommonly met with in this group of patients, in association with appendicitis. Through the infundibulo-pelvic ligament the adnexa of the left side may be alone involved.

Of all the organs the liver is the one which appendicitis causes to suffer most. The researches of Duvergy into the glycogenic ability and bile generating function of the liver in this connection is interesting and seems of value in determining whether one or both of the organs are at one and the same time the seat of infective inflammation. Acute appendicitis is accompanied with great hypoazoturia, the diminution amounting to five grams on an average in twenty-four hours. In the subacute stage the urea rises thirty to thirty-five grams in twenty-four hours, and as convalescence progresses descends to normal. It would seem therefore that the curve in urea secreted would serve as a guide both in diagnosis and prognosis.

Epigastric symptoms, so commonly present, must be regarded as reflex phenomena caused in the domain of the vagus nerve by an acute or chronic irritation, inflammatory or mechanical, in the nerve terminals of the appendix; hence, in many cases of chronic appendicitis spasmodic pain and distress are referred to the stomach, left hypochondriac, umbilical, left inguinal, and precordial regions. By this reasoning, it is readily seen why, in chronic or recurring appendicitis, there results a gastric dyspepsia which arises from, and is dependent upon, trouble within the secretory, motor or vasomotor function of this organ.

We must constantly remind ourselves that this spontaneous pain located in the appendix can simulate widely different conditions such as neuralgic or neuritic pains of influenzal origin. They are in like manner referred to the hip, the thigh, or again to the thorax as found in pneumonia and acute tuberculosis, and toxemia may be so pronounced as to cause marked icterus and symptoms of cerebral intoxication.

Chronic duodenal and gastric ulcers it would seem may be dependent upon septic thrombi of appendiceal origin. The experimental work of Payr (of Griswold) recently sought to establish a correlation between appendicitis and gastric ulcer by injecting into the veins of the mesoappendix an emulsion of dermatol, thus forming a thrombus in the gastric veins which was followed by a round ulcer.

Biliary lithiasis, chronic cholecystitis and hepatitis furnish forceful evidence in support of their origin in part, at least, depending primarily on infection of the appendix. The frequency of the occurrence of appendicitis renders it less likely to be undetected than the associate disease, though at times symptoms of primary appendicitis may be obscure and pass unperceived, as, for example, when involved in inguinal or crural hernia, renal colic, ureteral and cystic calculi. In this connection we must also be mindful of the frequent presence of nephritic sand, the existence of which should not cause to be admitted the diagnosis of renal colic until recourse to cystoscopy or ureteroscopy has made the condition clear, as patients with chronic appendicitis are often subject to renal lithiasis due to the intestinal toxemia arising from stasis.

We are confronted with two problems, that of appendicitis with associate affections in other abdominal viscera with symptoms of appendicitis predominating, and secondly, with disease where symptoms simulate appendicitis. All may give rise to symptoms difficult to differentiate, yet wholly separated from it. In the latter instance, such conditions as atonic dilatation of the stomach, ptosis of the viscera, especially of the terminal ileus, kidney, etc.; again, inflammation of omentum, cecum mobile, typhilitis, intestinal kinks, twisted pedicle of cysts, and acute angulation of the terminal ileus are instances of visceral affections giving rise to symptoms of appendicitis and for which appendectomy has been performed with obviously negative results.

Recurrent attacks of supposed typhoid fever have been proved chronic appendicitis and prompt cure result from its removal, one such case having been reported by J. W. Kennedy which proved on microscopic examination to be a mucocele, the normal appendiceal tissue having entirely disappeared.

The difficulties of exact diagnosis are even at the present day made clear to every surgeon. Most of the laboratory procedures including the *x*-ray and bismuth methods have been proved to possess but a curious interest, and while we know but little of the histogenesis of appendicitis, we are certain at least of this, that the diagnosis must be based upon the existence of a painful zone. The significance of this fact is that it can always be elicited at the point where the appendix is anchored; hence, failure to locate it would imply want of thoroughness in details of examination, for it can always be detected if palpation combined with rectal and vaginal examination be thorough. Especially is rectal examination of value in chronic and postcecally attached appendices, for in this way not only will the painful spot be located, but the invariable occurrence of reflex spasm of the abdominal muscles will bear considerable importance. I have often seen patients complain of more pain in the left side than on the right side where thorough examination plainly located the involved appendix. L. Mayer terms this pain "surgeon's pain" (douleur chirurgical). While I have never demanded a precise location of the pain at the usual point (McBurney's), it is a rule with me never to operate for acute or chronic appendicitis without finding a tender spot usually marked by the right half of the abdomen. We are obliged to take from this symptom of pain all additional signs possible, and it is this failure which is often the origin of the greater part of the diagnostic errors. The voluntary or spasmodic pain in chronic appendicitis can be either dull or lancinating, and is located in the right flank or more often on a level with the umbilicus or a little below it. More rarely it occupies the entire side of the abdomen extending as high as the epigastrium and above to the thorax, or, again, into the left iliac fossa.

As to the pain, it should be sought by observation and palpation rather than interrogation, for pain from this cause presents the peculiarity of being most intense at a given point in the same patient, and when this particular point is located, the additional reflex muscular contractions produced by palpation will prevent confusing it with simulated or suggested pain. It may be at times deep seated and appear only after palpation, and persisting after the examination is completed. In this reported series some cases were confounded with intestinal obstruction, with acute and chronic enteritis and enterocolitis.

ACTUAL AND SIMULATED ACUTE APPENDICITIS.

Of the patients suffering with acute appendicitis, I would particularly refer to the coincidence of acute attacks of appendicitis in the newly wed female and in the beginning of pregnancy, salpingo-ovaritis, and with the early or incipient period of typhoid fever.

The frequency of acute appendicitis causes us often to conclude such a diagnosis erroneously as the actual condition may be a perforation from a gastric or duodenal ulcer or acute pancreatitis. Indeed, such eventualities should always be thought of when in operating for acute appendicitis one finds the appendix nearly normal, simply congested but with suspicious liquid in the abdomen.

In the presence of such signs, it is essential that we exclude in addition to the possibilities referred to, acute salpingitis, acute cholecystitis, or, more rarely, the error may be torsion of the pedicle of an ovarian cyst, as two of my cases have proven. Intestinal tumors are less rarely the cause of error, though ileocecal tuberculosis may simulate acute appendicitis, and the exact nature of the morbid process made clear only at operation, or metastatic abscesses of tubercular origin may form the greater part of acute appendicitis in which the appendix takes no part, though the symptom may simulate it. The confusion of acute appendicitis with a simple indigestion or hysterical enteritis is an eventuality readily avoided by analysis of the blood in conjunction with painstaking physical examination. Lillianthal has reported a case of phlebolith of the right renal vein which also simulated acute appendicitis.

ACTUAL AND SIMULATED CHRONIC APPENDICITIS.

In chronic appendicitis errors are still more frequent. Every one admits that appendicitis exists as a chronic entity and, as Tédenat has well shown, it creates a variable state of anarchy in the abdomen, persisting until old age or making ready, during many months or years, for a more or less violent explosion of an acute attack. It is made manifest in its quiescent state in a very variable manner, and by troubles often ill defined as chronic intoxication either of the stomach, liver or intestines, and Delagénière has called attention to a special pulmonary form manifesting itself as asthma.

Because of these vagaries, patients are unduly operated on for appendicitis which they do not have. There exists nevertheless in a large percentage of these appendices distinct pathologic lesions of chronic appendicitis. In addition to foreign bodies there have been found in most of my patients lesions of sclerosis, atrophy of the mucous membrane and total obliteration of the lumen. This last morbid variety has been proved the remains of a chronic inflammation and not a process of physiologic retrogression as held by some. It is, therefore, now a settled conviction that chronic appendicitis with obliteration of the lumen bears a causative relation to carcinoma, and is a disturbing factor in the physiologic function of the gastric, hepatic, duodenal and pancreatic system. Sclerosis of the appendix should be considered as an inflammatory remains, as, when removed in the course of laparotomy for other affection, and studied microscopically, it has been proved sclerosed and obliterated, even where the patient's previous history gave no symptoms referable at any time to the appendix, which supports the contention that appendicitis is primarily a chronic process, and that it can without symptoms undergo imperceptible evolution. On the other hand, such a favorable termination can not always be assured, as it is in just these forms of appendicitis that primary carcinoma has been most frequently found. In my series there were three, the existence of cancer in two of which was not even suspected until microscopic study had revealed its presence. It is highly probable that routine microscopic study of these chronically obliterated appendices would discover an even larger percentage had undergone malignant transition. This possibility is additional reason for the prompt removal of all chronically inflamed appendices. Chronic appendicitis is frequently unrecognized, and daily confounded with hyperchlorhydria, gastritis, dyspepsia of every kind, and with enterocolitis both mucous and membranous, in all of which it is more often the cause.

It is well to be mindful of the possible presence of a chronically inflamed appendix in painful irreducible right inguinoscrotal hernias.

We must be equally mindful of the frequent presence of worms in the appendix as a cause of chronic inflammation and conversely of the simulation of appendicitis in children by worms in the intestines.

I would again speak of the frequent association of chronic appendicitis, movable kidney and enteroptosis, with cecal stasis, the latter causing general systemic derangement through toxemia.

When differentiation of the various abdominal affections is doubtful, and it becomes necessary to hesitate about the existence of the lesion being appendicular, renal, visceral or ovarian, and the morbid symptoms are sufficiently pronounced for an operation, such should be undertaken through an incision capable of allowing intervention at the same time with the viscera and the appendix, or with the ovary and the appendix, or with the kidney and the appendix, the necessary technic of which need not be considered in this discussion. Faisans says: "Appendicitis is so frequent that one must always think of it and seek for it systematically by aid of interrogation and a complimentary examination as one seeks for alcoholism and syphilis."

DISCUSSION.

DR. EDWARD MARTIN, Philadelphia: Dr. Hammond's paper carries among its many valuable messages one to the effect that appendicitis, a disease which is generally supposed to be so well understood that mistakes in its recognition are difficult or impossible, is at times attended by diagnostic difficulties which baffle the most expert. He lays special stress in diagnosis upon tenderness placed over McBurney's point, which does not correspond to the base of the appendix but usually to the ileocecal juncture or an area just above this and states that he is always able to elicit this. We have not been so fortunate and have studied cases both fulminatingly acute and bafflingly chronic which have failed to give this sign, though it is true if a surgeon be determined to get it and be sufficiently strong he will always succeed.

Of the acute cases those in which the appendix is placed behind the cecum are the most difficult and hence give the largest mortality, since in them there may be neither tenderness nor rigidity in the right iliac fossa, but the symptoms may assume the type of an acute gastroenteritis. These cases nearly all of them (indeed, I think all of them) exhibit the systemic symptoms of violent sepsis and with the characteristic blood changes and on these symptoms alone is diagnosis at times possible.

As to the chronic cases we encounter a group, fortunately a small one, which still remain to be explained and to be cured. The type is represented by a woman with pain referred to her right iliac fossa and the region thereabout. Usually, but not always, constipated. Pains recurring without particular reference to exercise or position, often associated with ptosis and the neurasthenia of intestinal toxemia. The digestion may be from the patient's standpoint quite perfect. A multitude of treatments are applied without avail, including, as a rule, rest in bed. There is transitory tenderness in the right iliac fossa but no rigidity and the tenderness is likely to vary in position. All these patients have their appendices removed. If the surgeon be an enthusiastic one he will probably hang the kidney also. He will search the gall bladder and find it normal but may drain it to be on the safe side. The pathological report of the appendix is "fibrosis the result of chronic inflammation," which is always gratifying. Many of these patients get well. Some do not. The question comes as to the part played by the appendix in the symptomatology and I have at least a theory to offer and an operation to suggest which may be helpful and curative. We all know that the ordinary chronic case of appendicitis is attended by constipation and intestinal toxemia. That when the appendix is removed constipation is cured, the toxemia ceases. The appendix in itself is entirely inadequate to cause the symptoms of which the patient complains, yet its removal cures. We need an explanation for this and it is probably afforded by the action of the ileocecal valve, lying in close relation to the appendix and subject, as are other valves, to reflexes from neighboring organs. The physiologists have shown us that the alimentary contents remain actually longer in the lower segment of the ileum than they do in the stomach. This long delay is accomplished by a valve made by the invagination of the ileum into the cecum. This valve is both muscular and mechanical. Indeed if the cecum be opened the most conspicuous feature on its inner surface is the two-lipped projection of this valve, often of cartilaginous hardness and forming a shelf or partial partition between the cecum and the ascending colon. By the law of the sphincters they are in a condition of tonic contracture until an inhibitory influence causes them to relax. A disturbance of the sphincter is characterized by spasm and not by a dilatation, and indeed a sphincteric paresis is a surgical and medical curiosity. By virtue of the gastric and ileocecal reflex when food is taken into the stomach there is started an active peristalsis in the lower segment of the ileum accompanied by dilatation of the ileocecal sphincter and a rapid distention of the cecum. This rapid distention of the cecum causes in turn a muscular contracture which throws the cecal contents into the ascending colon. From the ascending colon it may be projected as a large mass with extreme rapidity as far as the sigmoid. If the sigmoid be full the sudden increased pressure forces its contents into the rectum and the desire for defecation is experienced. This explains the habitual postprandial defecation of mankind.

Now given a focus of irritation reflexly exciting the ileocecal sphincter to contraction it is evident that the passage of the contents of the lower ileum will be delayed, that when the contents do pass they will pass slowly without producing a rapid distention which in itself excites contraction, that the ultimate effect will be a long delay not only in the cecum itself but in the lower segment of the ileum, and that intestinal toxemia, which certainly develops more rapidly and virulently from sepsis in the small intestine than in the large, will result. Remove the focus of infection in the appendix and the sphincter, if it has not been too long teased and has not overgrown therefrom, will resume its normal function. Hence the cure of constipation by removing the chronically inflamed appendix. If, however, the sphincter has been permanently hypertrophied, or even sclerosed, and if the cecum has been largely dilated the removal of the original cause may now cease to effect the results therefrom and the symptoms will continue. If these arguments be correct the treatment of this condition is the rendering of the ileocecal sphincter partially, if not completely, incompetent and this can be done either by the Heinicke-Mikulicz operation as practiced upon the pylorus, a procedure successfully applied to two patients by W. J. Mayo some years ago or by exposing the sphincter through a slit in the longitudinal band and dividing it from within as elaborated by Ginsburg.

Dr. Hammond, closing: On this as on former occasions, I have profited by the logic in Dr. Martin's discussion, and while I agree in the main with what he said concerning difficulties of always eliciting a painful zone, of this I feel sure, that one is greatly supported in one's belief as to the true character of the ailment, if such is demonstrable.

As to the ten per cent. of patients not cured by the operation, is it not likely that failure was due to definite changes already existing in the intestinal walls from long-standing disease. If such a possibility did explain part of our failures, then we must continue to have in spite of operative treatment, some disappointments. Of this I am sure that the prevalence of appendicitis makes it necessary that we seek for it by aid of interrogation and complementary examination as one seeks for alcoholism in syphilis.

CESAREAN SECTION.

BY EDWARD P. DAVIS, M.D.,
Philadelphia.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

Cesarean section to-day may be divided into those operations which have been abundantly proved by ample experience, and those which are more recent and still on trial.

In the first is the classic Cesarean section, by which is meant opening the abdomen, turning out the uterus, incising it, extracting its contents, closing the womb, replacing it and closing the abdomen. This is the most frequently performed of all the varieties and applicable to the greatest number of clean cases.

Hysterectomy, to terminate pregnancy, is widely practiced and in clean cases is followed by the intraperitoneal treatment of the stump, over which the peritoneal edges have been closed. The cut edges of the broad ligaments are also firmly brought together in this operation. In septic cases, hysterectomy in the pregnant woman is followed by extraperitoneal treament of the stump, fastening it in the lower end of the adbominal incision by a clamp, the Porro method, or stitching it in the lower end of the abdominal wound.

In pregnancy complicated by cancer of the uterus, the extirpation of the womb is performed.

In multiparæ, requiring section before viability, many operators perform vaginal Cesarean section.

Two methods of performing section are virtually on trial and each is successful in the hands of those accustomed to perform it. One is the classic section without turning the womb out of the abdominal cavity. The abdominal incision is made above the umbilicus and an assistant presses the abdominal walls firmly against the uterus and the upper anterior surface of the womb is incised longitudinally to extract its contents. The interior of the womb is disturbed as little as possible. The womb and abdomen are closed in the usual manner. Those who practice this method claim for it that shock and disturbance are less, as the contents of the abdomen are subjected to less manipulation. We think that by this method there is danger of infecting the abdominal cavity by the entrance of amniotic liquid.

The effort is made by others to avoid infecting the peritoneum by delivering the child through a peritoneal fistula. Some have tried to make the operation extraperitoneal by making the incision above the pubes, pushing up the peritoneal sac and opening the uterus through its lower segment. Experience shows that in the delivery of the child the peritoneal sac is often opened, which defeats the purpose of this method. To avoid this others open the abdomen as usual, or by the lower incision, stitch together the abdominal peritoneum and the peritoneal covering of the uterus on its anterior surface and open the uterus in the center between the lines of peritoneal suture. Delivery is thus affected through a peritoneal fistula. It is claimed that in septic cases this fistula may be left open for drainage, and that by this means the sacrifice of the septic womb may be avoided.

We have witnessed the so-called extraperitoneal section done by experts abroad, and we have not been sufficiently impressed with its advantages to abandon the methods which we now employ.

The wide adoption of Cesarean section has led to the neglect of embryotomy. The limitations of Cesarean section should be distinctly understood if its performance is not to be abused.

Cesarean section is most successful in clean cases, and among these, operations of election without labor give very satisfactory result. Clean cases are those in which no attempt of any sort has been made to deliver, in which few vaginal examinations have been made under strict antiseptic precautions, and in which mother and child are not the victims of some constitutional infection and are in good condition.

Suspected cases are those who have been under the care of persons too ignorant, dirty or lazy to practice antiseptic precautions. Cases where one or more attempts to deliver have been made by forceps, version or embryotomy, although the effort was in the hands of competent persons, must be classed as suspected. It is practically impossible to attempt vaginal delivery artificially without conveying bacteria from the lower birth canal into the uterus. In suspected cases good surgical judgment and technic are required to deliver the child and save the mother from infection and still preserve her womb.

Infected cases are those in bad surroundings, with bad care, long delay, many examinations, and incompetent attempts at delivery. Parturient women suffering from pneumonia, typhoid or other acute infection or highly toxemic, must be classed as infected cases,

Improvement in obstetric practice must come from limiting attempts at vaginal delivery to cases where engagement has fully developed, and with the faithful practice of antisepsis. Where these conditions can not pertain, the practitioner will do his patient the greatest service by sending her to hospital, or summoning competent help.

In infected and suspected cases, natural delivery failing, where the patient can not have the benefit of skilled attention, craniotomy is frequently the best procedure. This will deliver the patient successfully and avoid the sacrifice of the infected uterus. It exposes her to the risk of the infection from which she is suffering.

Without further theoretical discussion we give the results of our experience up to July 10, 1914. We have divided our cases into those uninfected and in fair condition, in which 129 operations have been done, with one maternal death, a maternal mortality of .76 of one per cent. This death resulted from infection by the *Bacillus proteus vulgaris,* and bacteriological examination of sutures, dressings and appliances failed to reveal the source of the infection. There was no fetal mortality among these cases. The maternal morbidity consisted of a few cases of tardy closure of the abdominal incision through breaking down of fat. No hernia developed.

Class second in our cases, consists of those infected when brought to our attention, highly toxemic or suffering from constitutional and severe disease, as extensive disease of the heart. Of these cases there were thirty-five, with eleven maternal deaths. Among the children the mortality was high, as the child was dead in a considerable number of the cases. It is interesting to observe that of these thirty-five cases, thirty occurred complicated by toxemia, infection and disease other than the ordinary puerperal septic infection.

In addition we have done post-mortem section on two mothers, extracting a living child. The maternal mortality of the entire series was 7 per cent., the mortality of clean cases .76 of 1 per cent.

The indications for which we have operated included contracted pelvis, excessive fetal size, threatened uterine rupture, pelvic tumors complicating labor, rupture of the uterus, physiological incompetence for labor, separation of the normally implanted placenta, placenta prævia, septic infection, uterine rupture and eclampsia.

As regards the sort of operation chosen, the classic Cesarean section was done in 100 cases; hysterectomy, with the dropping of the stump in forty-one cases; the Porro operation, using the clamp and leaving the stump outside the abdomen in twenty-three cases. These, with the two cases of section upon the dead, make the 166 operations.

Our experience leads us to believe in the value of the closure of the uterine muscle in the classic section, by the best quality of sterile silk. In six repeated sections we have examined the uterus and were unable to find a trace of silk sutures formerly placed within its muscle. We close the peritoneal covering of the uterus over the muscle by a single continuous suture with chromicized catgut. In hysterectomy we remove or leave the ovaries in accordance with the age and circumstances of the patient. With the patient in good condition, and if requested, we often remove the appendix at the time of section.

In suspected cases, if the woman be young and in good condition, we do not remove the uterus, but irrigate the womb thoroughly after removing its contents, and pack it with ten per cent. iodoform gauze, brought through the cervix. This gauze is withdrawn forty-eight hours after operation. It serves the purpose of a drain and disinfectant.

In infected cases we use the Porro operation with clamp, leaving the stump outside at the lower end of the abdominal incision. Our results have been exceedingly good by this method.

We are especially interested in the treatment of hemorrhage complicating pregnancy by surgical means. We consider placenta prævia a variety of ectopic gestation to receive the same treatment given to ectopic pregnancy within the pelvis. We have performed abdominal Cesarean section of the classic type on eighteen cases of placenta prævia with no maternal death. The fetal mortality has been 10 per cent., because many of the cases were brought to the hospital exsanguinated, the child dead or dying.

In two cases we have extirpated the pregnant uterus at four months: In one for pregnancy complicated by cancer; and in one for pregnancy complicated by placenta prævia and septic infection. Both patients recovered.

In a third case we emptied the pregnant uterus by section at six months for accidental separation of the placenta, complicated by severe toxemia. This patient also recovered.

Recent statistics in placenta prævia show that its mortality arises largely from septic infection; hence, we have abandoned the tampon and all unnecessary interference. For the general practitioner, whose patients must remain at home, the rupture of the membranes, where the examining finger can find the membranes distinctly, and the stimulation of the uterine muscle is the safest treatment for placenta prævia. For the general practitioner, whose patient is at home, in central placenta prævia, tearing through the placenta and bringing down the leg and breech of the child is the safest treatment. No attempt at delivery should be made and the fetus should be sacrificed in the interest of the mother. Where cases of placenta prævia are seen after the first hemorrhage, mother and child in good condition and the child viable, both will obtain the best result if transferred to hospital and treated by abdominal Cesarean section.

INDICATIONS FOR CESAREAN SECTION.

BY HAROLD A. MILLER, M.D.,
Pittsburgh.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

The frequency of the question, "Upon what class of cases do you do Cesarean Section?" has prompted me to present to this society a synopsis of the indications as seen by me with a due regard to the opinion of others as published in the voluminous literature now in existence, and from which quotations are freely made.

The first serious attempt to add the operation of Cesarean to the then known obstetric procedures was no doubt for the sole purpose of conserving the life of the infant, but the technic has now been so perfected that frequently we advise and do the operation on account of the decreased maternal mortality. In this class of cases I would place fibroids, ovarian cysts, pelvic growths which materially obstruct the birth canal, and atresia of the vagina, all of which may best be dealt with in this manner.

MATERNAL INDICATIONS.

The necessity of using a living infant to dam the hemorrhage in placenta prævia has but naturally led to a search for a route which avoided the maternal reservoir. This we do by using the abdominal route. The number of cases now on record are sufficient to justify the statement that the maternal mortality should not exceed the two per cent. usually accepted as a fair mortality for this operation, against the fifteen to twenty-five per cent. mortality which previously was considered to represent the average.

The infantile mortality in cases of Braxton Hicks version for the treatment of this condition was fifty per cent. or over, and in no place can it be more truly said that the one life was balanced against the other, for the more slow and conservative the delivery, the greater the infantile mortality, the more rapid deliveries giving the best infantile mortality, but causing a marked increase in the maternal mortality and morbidity.

Eclampsia has long been a passenger on the good ship, "Watchful Waiting," but the frequency of the development of terminal pathology and the generally accepted dictum that it can not be successfully treated as long as the exciting cause, "the fetus," remains *in utero*, have caused us carefully to weigh the different methods of rapid termination of pregnancy with the following result: A full term pregnancy in a primipara and some multiparæ can be more readily and safely terminated by Cesarean than by any other method, giving satisfactory results in cases where terminal pathology does not already exist.

Atresia of the vagina is a complication comparatively rare, and only mentioned in order that it may be included in this table.

In connection with the above specific indications, we have at times to deal with other cases where two or more elements may cause us to consider Cesarean section from the maternal point of view; in other words, Cesarean section is indicated when the primary operation is less dangerous than any other method of delivery, and when the primary mortality and end results are less dangerous than the primary mortality and end results of any other method.

Heart Cases. It has been truly said that a heart which will stand the test of pregnancy will also stand the strain of labor. On the contrary, given a heart which during pregnancy has suffered frequent loss of compensation and has a complication such as a faulty position or a moderate degree of pelvic contraction, which promises to make labor unduly long and tedious, the labor can at times be more successfully and safely terminated by a Cesarean than by nature's unaided efforts or even nature's efforts aided by a forceps application.

The dictum, once a Cesarean, always a Cesarean, is largely true, and especially so if the indication for the previous Cesarean was a pelvic contraction. I would also consider the indication to be a positive one upon that class of cases where the convalescence from the previous Cesarean had been rather stormy, leaving us with a uterine scar which could not be trusted for a long and tedious labor, and which would probably rupture if put to the test. Under any circumstances, a patient upon which a Cesarean has been done, must have her subsequent labors at such a place and so conducted that upon the slightest indication of a weakening of the scar, the abdomen may be immediately opened and the labor terminated.

FETAL INDICATIONS.

In considering Cesarean sections from the viewpoint of infantile mortality, we must first and foremost, consider pelvic contractions, and in general it can be said that a primary Cesarean should be done on all cases where the fetus is at term and the true conjugate is seven and one-half centimeters or less, and six and one-half centimeters or less, for a gestation of thirty-six or thirty-seven weeks.

In border-line cases, measurements at best can only be a relative indication, and the crucial test is a reasonable test of labor ultimately settling the question by determining whether or not the head is engaged in the superior strait. Or, if in following Barbour's method of examination we find a disproportion, remember the relative safety of Cesarean section as compared with the application of forceps on the unengaged head. That no harm is done such border-line cases by allowing them the test of labor of about the average time for the completion of the first stage is best illustrated by a series of 1282 cases collected by Ronth. He divides into classes A, B, C and D. Class C and D will not be considered as they represent his infected cases. Class A, designated as not in labor, contains 245 cases with nine deaths, or 3.6 per cent. maternal mortality; class B, in labor, membranes intact, 224 cases, five deaths, or maternal mortality of 2.2 per cent., which is 1.4 less than those which have not had the test of labor.

Abnormal presentations, such as an impacted face, cross presentations, etc., which in reality are the equivalent of an equal disproportion, suggest Cesarean unless easily corrected, and provided no contraindication exists. At times, a normal pelvis with premature rupture of the membranes and unengaged head may offer such difficulties that a Cesarean must be the operation of election if we wish to avoid infantile mortality. These cases are especially frequent if the head presents in an occipital posterior position. Cesarean section may also be the operation of election in cases of the physically unfit, elderly primiparæ, senile uterus and prolapse of the cord.

In general we may say that from an infantile point of view, Cesarean must be considered in all cases with an unengaged floating head where high forceps or version is the alternative.

Any indication, either maternal or fetal, is modified and usually contraindicated in the presence of infection, sloughing cervix, dead fetus, and, in general, any time when either the maternal or fetal life is not endangered by nature's unaided efforts.

COMPLICATIONS.

It may be said that all operations have their complications which under proper conditions may usually be avoided, still, nevertheless do occur with more or less frequency. It is well for us to consider in this connection those which are incident to Cesarean and balance them against those which are avoided by it.

Shock, incident to all operations, is probably less frequent in Cesarean than most other operations of equal gravity, as we largely deal with patients in the prime of life who have been prepared by nature for the physical exertion of labor. It must be comparatively rare as I do not find it given as a cause of death in the cases of primary Cesarean which I have been able to review.

Postoperative hemorrhage has occurred on one occasion in our series. The uterine incision was through the placental site and we failed to secure an accurate approximation of the wall, permitting the sinuses to bleed into the uterine cavity. It was alarming but ultimately controlled by the liberal use of ergot.

Infection should not be more frequent than in other clean abdominal operations. If present, however, it may either cause peritonitis, abscess of the uterus, or be of the general blood stream variety.

Acute dilatation of the stomach occurred as a complication in our series of cases five times, which gives us a percentage of twelve. In reviewing the different published series of cases I find that it occurs in nine per cent. of the cases, which corresponds rather closely to ours. I believe that a review of the Cesarean sections in the future will show this complication to be more frequent in this class of operations than in the ordinary abdominal operation. The cause for the same will perhaps be found in the sudden decrease of intraäbdominal pressure. In treating these cases we have used the stomach pump vigorously and frequently, never allowing a period of more than about two hours to elapse between lavage, and our results have been very satisfactory, not having as yet had mortality from this complication.

Acute dilatation of the heart has occurred in one case, and I am frank to admit that prior to the operation I did not discover that the heart muscle was impaired, although there was a very distinct presystolic murmur found twenty-four hours after the operation, which seemed to have caused the elevation of pulse which within four hours went from eighty-four to one hundred forty-six with no other demonstrable cause. Upon consulting the physician who referred the case to us, he told me that several years ago she had an attack of typhoid fever which lasted for a period of four months, during which time there was a continued rapid pulse and a heart lesion had been suspected.

Rupture of the uterus in subsequent labors has been reported frequently enough to warrant the assertion that under no circumstances should a uterus of this type be subjected to a prolonged and tedious labor. On the contrary, however, in one instance the patient upon whom we had previously done a Cesarean section, remained in labor for about sixty hours before coming to the hospital, during which time she was having active labor pains. Upon opening the abdomen there seemed to be no evidence of weakening of the scar.

Adhesions no doubt frequently occur following Cesarean section, and in all probability are in direct relation to the vaginal manipulation which had occurred prior to the operation. Infection under these circumstances is always present, the degree of contamination being in direct relation to number of vaginal examinations, or efforts to deliver.

Uterine fistula and hernia are not more frequent in this class of cases than in other abdominal operations.

In contradistinction to the complications which are incident to the operation of Cesarean section, it may be well for us to consider for a moment those which are avoided by it. Among those we have placed cervical tears, vaginal tears, perineal tears, sacroiliac trouble, injury to the coccyx, nervous collapse, infantile mortality and infantile morbidity. We will not consider in detail the cervix and vaginal injury, other than to call attention to the very frequent cases of prolapse which follow delivery *per vaginam*, especially by means of those procedures between which and Cesarean section the obstetrician is frequently called upon to choose. Less well recognized, but of equal importance, is the absence of nervous collapse which is far from uncommon as a sequela to labor in the over-civilized woman to-day. Constitutional ill equipment was first recognized as an indication of Cesarean by Rabo. His views have been supported by Davis, Newell and practically all obstetricians who have given the matter considerable thought. Reynolds says that when a poorly equipped woman has lost her health and strength during pregnancy, her pains are nearly always inefficient and irregular and the uterus acts poorly; labor is not likely to be spontaneous and is often followed by a neurasthenic state lasting for a long period.

Patients upon whom we have performed a Cesarean section have made perfectly satisfactory recoveries and have enjoyed health during the subsequent years in marked contrast to a great number of those whose labors have been treated by other measures. I have many times regretted not having done a Cesarean for this indication, while, on the other hand, I have yet to regret a single operation upon this class of cases.

With regard to infantile morbidity, I wish to state that the most unfortunate results of a delivery through the birth canal is the frequency of subdural hemorrhage, idiocy, epilepsy and brachial paralysis, following intrapelvic operations. Crozier believes that thirty per cent. of all children who recover from cerebral hemorrhage at birth, develop epilepsy later in life. Kendalworth found a history of a difficult or operative delivery in eight and nine-tenths per cent. of all cases of idiocy. Harper found that sixteen to seventeen per cent. of his cases of epilepsy had a history of difficult birth.

In conclusion we may state that the prime purpose of conception is the reproduction of the race, and follow the original indications for the performance of Cesarean section whenever necessary to secure a living child. To secure a child not only living, but free from injury, should be the object of every obstetrical procedure. To avoid fetal morbidity is a greater triumph for Cesarean section than the saving of a fetal life.

Class.	Cases.	Complication.
A	18	Pelvic contraction—C. V. 8 cm. or less.
B	5	Relative contraction (unengaged head after test of labor) C. V. 8½ to 9 cm.
C	7	Eclampsia
D	3	Placenta prævia
E	4	Previous Cesarean
F	1	Ruptured uterus
G	1	Heart complication
H	1	Prolapsed cervix
I	3	Physically unfit
J	2	Face presentation

DISCUSSION.

ON PAPERS OF DRS. DAVIS AND MILLER.

Dr. James R. Freeland, Pittsburgh: Drs. Davis and Miller undoubtedly included all the indications for Cesarean section, but it is a question if they did not include cases that might better be omitted. Placenta prævia is surely not an indication in every case. Even if Dr. Miller's prognosis of two per cent. gave a true estimate of the mortality rate in selected cases, which is doubtful, it would mount considerably above this in patients as they come to the maternity ward for treatment. Dr. Davis gave forty per cent. as his fetal mortality in eighteen cases of Cesarean section for placenta prævia. Dr. Miller quoted fifty per cent. or more as the mortality in patients treated by bipolar version. Consequently, judging by fetal mortality, the argument for Cesarean section barely escapes being classed as unsound. If the difference in the maternal mortality is as Dr. Miller gave it, two per cent. for Cesarean section and fifteen or twenty per cent. for version, then the argument is sound. But can figures be produced to prove this? I think not. Our mortality while I was assistant in the Rotunda Hospital was between seven and eight per cent. for all classes of cases, neglected or otherwise, treated by bipolar version. The fetal mortality was fifty-nine per cent. In subsequent pregnancies, what procedure is to be adopted? Is Dr. Miller's statement, "Once a Cesarean, always a Cesarean," to apply to these cases? If so, a patient with a normal pelvis is condemned to Cesarean section in each subsequent pregnancy, for a problematical reduction in primary maternal mortality.

Statistics in eclampsia, unless juggled, do not support the arguments that Cesarean section advocates advance. Stroganoff in Petrograd, Tweedy in Dublin, and Hirst in Philadelphia, all have a maternal mortality below ten per cent. for a long series of cases treated by the so-called expectant method. Our mortality during the four years I was in the Rotunda Hospital was under eight per cent. for a series of over forty cases, and in the few cases I have treated in the Western Pennsylvania Hospital, I have followed the same method with the same results. The fetal mortality is undoubtedly higher with the expectant treatment, but, in view of the better maternal results, the increased fetal mortality is not to be considered. Including elderly primiparæ and the physically unfit, in a list of indications for Cesarean section, seems to indicate a desire to increase the excuse for operation.

Dr. Thomas B. Carroll, Pittsburgh: I wish to express my appreciation of the very excellent presentation of the subject of Cesarean section by Dr. Davis and Dr. Miller. In view of the extensive experience of these gentlemen, I fear that it will be rather presumptuous upon my part to attempt either to add to what they have already said or to subtract anything therefrom. For the sake of comparison, however, I wish to mention briefly the conditions and indications which have led me to accept or reject Cesarean section as an operative procedure in the rather limited number of patients for whose care I have been responsible.

Though as Dr. Davis has stated the indications for Cesarean section are fairly well defined, it would seem wise to me to subject, to the test of labor, all patients in whom there is a relative pelvic indication. Also in those instances in which there is an absolute pelvic indication, a few hours of labor producing some degree of cervical dilatation will not only render drainage during the puerperium more satisfactory but will eliminate that fear which constitutes in my mind one of the most important causes leading to difficulty incident to the anesthetic.

The test of labor, however, can not be measured by hours, but rather by the result of the patient's effort. It has been my practice to allow the test to continue as long as both mother and child are doing well and as long as perceptible progress is being made. Should either mother or child, however, cease to do well, or progress cease, operation is immediately performed. Of course, patients suffering from carcinoma of the cervix, or central placenta prævia with living child, or old tubercular processes involving sacrum or sacro-iliac joints, should not be subjected at all to the influence of labor.

In regard to the various specific conditions under which Cesarean section arises for consideration are the following:

1. *Contracted Pelvis.* This is, of course, the most frequent and is disposed of as above mentioned.

2. *Eclampsia.* For the past two years the profession has been almost equally divided in regard to expectant and operative treatment of eclampsia. It would seem to me, however, that in the majority of cases, the former is the wiser of the two courses. The toxemia from which the patient suffers is not of immediate origin but has accumulated through a period of weeks in all probability. It seems to me, therefore, that the additional toxemia incident to a few extra hours is not nearly so deleterious to the welfare of the patient as is a major operation plus a prolonged anesthetic. To me, therefore, the conservative method seems preferable in most instances. In cases, however, of profound toxemia with a living child, where the operation can be executed without an anesthetic, a Cesarean section is indicated, rather in the interest of the child than the interest of the mother.

By the conservative method I have treated some fifteen cases with a maternal mortality of twenty-five per cent. plus, and a corresponding fetal mortality, as compared with an operative maternal mortality of forty-eight per cent., as reported by J. T. Williams.

3. *Placenta Prævia.* Since Zinke's paper in 1901 Cesarean section has grown somewhat popular in

the hands of a few operators. Pankow reporting a maternal mortality of 2.5 per cent. and fetal mortality of 2.9 per cent. as compared with the maternal mortality of 5 to 10 per cent. and a fetal mortality of 50 to 80 per cent. by ordinary methods of treatment. My own conviction is that, with central placenta praevia with a living child, section gives the best result and should be employed. With dead child I can not see wherein the operative course can be expected to give any better result than does the method of Braxton-Hicks. In the six cases that have come under my care the Braxton-Hicks method was employed. All the mothers survived, all the children, excepting two, were dead when the patients were seen. One of these children, I think, could have been saved had a section been done.

4. *Heart Lesions.* It has been my practice in patients suffering from heart complications to allow gestation to progress so long as compensation remains sufficient; with failure of compensation, however, safety lies, I think, in the induction of labor. Should compensation continue unbroken a normal labor can be expected. Cesarean section, I think has no place in such class of patients.

5. *Previous Cesarean Section.* As an indication for subsequent section this depends, of course, upon the indications for the original operation and upon the condition of the uterine scar. Previous section alone, however, can not be regarded as a positive indication for subsequent sections.

6. *Physical Unfitness.* I am aware that according to Renolds, Rabo and various other observers such patients are quite numerous. Difficulty, however, as to determining as to what patient belongs to this class has rendered it necessary to apply the test of labor which in practically all instances has been followed by surprisingly satisfactory results. Section is not indicated.

7. *Abnormal Presentation.* In five cases of face presentation all have terminated spontaneously after a tedious labor. Face presentation alone can not be regarded as an indication for Cesarean section. Impacted shoulder with living child and firmly contracted uterus requires, I think, Cesarean section.

8. In prolapse of cord with dilatation insufficient to permit version or delivery with forceps after liberal incision of vaginal wall and perineum, section is indicated.

9. The wisdom of the general employment of Cesarean section as a substitute for high forceps seems to me questionable. Each operation has its individual field, I think, and when employed within the limits of its possibilities can be expected to give equally good results.

10. Above indication complicated with infection or the possibility of infection. (*a*) Infection suspected, extraperitoneal Cesarean section; (*b*) known infection, (1) where patient is willing to sacrifice reproductive organs, Porro or the operation recently introduced by Reymond; (2) when patient is not willing to sacrifice reproductive organs the operation known as Bauchdeckenfistle may be employed.

Upon the above indication I have acted in caring for my patients numbering about five hundred. In these, four Cesarean sections have been done, all in hospital patients with satisfactory results to both mother and child. Four other children have been lost, one of which section would have saved.

Dr. Charles Edward Ziegler, Pittsburgh: In practice, this question of the indications for Cesarean section has given me very little trouble. On the other hand I have been much concerned at times about the contraindications for the operation. Feeling as I do that the unnecessary operation is always contraindicated, I find it impossible if I am to be entirely conscientious in my work, to do but a very limited number of Cesarean sections, not over four or five per thousand of my obstetric cases.

What I have to say in discussing Dr. Miller's paper is not said in any spirit of criticism of his work for the very simple reason that I know too little about it. I should like to know more. Some of us have the impression, however, that he is doing the operation very frequently and that he has done a large number of them. We should like to have his statistics; how many he has done per thousand of his obstetric cases, his reasons for doing them and what his results have been. He has given us a formal, textbook recital of the indications for Cesarean section but has said absolutely nothing definite or statistical of his own cases as, for example, Dr. Davis has done in his paper.

If physical unfitness is to be placed among the indications, I can readily understand how one's list of Cesarean sections may be made to grow very rapidly. My opinion is that the obstetrician who does the operation for this indication alone will soon find himself making it the excuse for a number of unjustifiable sections. I do not believe the physician lives who can say with any degree of certainty in the vast majority of cases, that a patient is physically unfit to withstand safely the ordeal of labor. I have again and again observed women apparently the least fit from the standpoint of their general physical condition, pass through labor easily and rapidly and this occasionally in the presence of serious organic disease. I recall especially the wife of a colleague whom Dr. Lichty watched with me through her pregnancy, anticipating trouble because of a heart lesion. The patient, a primipara with a moderately contracted pelvis and an average-sized baby, delivered herself within an hour following the onset of active labor and with no bad effects.

The non-engagement of the head as an indication is also being much overworked. The fact that the head does not engage, even after hours of hard labor, may mean absolutely nothing as a sign of insuperable disproportion. Especially is this the case in multiparæ in whom it is the rule for the head to remain unengaged until the os is fully dilated and the membranes ruptured and this when there is no disproportion. In occipitoposterior positions, in presentation of one or other of the parietal bones, in the deflexion attitudes and faulty mechanisms the head may not and frequently does not engage in the presence even of a roomy pelvis and hard labor. The experienced obstetrician does not, however, resort to Cesarean section. He recognizes the difficulty and overcomes it by methods suited to the case and delivers successfully through the vagina. In overstretching and weakening of the uterine walls as a result of twins, of hydramnios, of oft repeated pregnancies and disease, it may be impossible for the head to engage but to do a Cesarean section, perhaps without even making a diagnosis, is preposterous, and yet it has been done. In the hands of the experienced and successful obstetrician the test of labor does not mean the simple inactive waiting of a few hours under conditions as above cited but presupposes the most careful study of the case, the fullest appreciation of all the difficulties and possibilities associated with it and the giving of every known assistance in support of the test.

The ease and success with which Cesarean section is performed in the hands of the trained surgeon has been responsible for many unnecessary sections and much reckless operating. This is largly due to the fact that the performance of the operation requires no special knowledge of obstetrics and is frequently done by those who know nothing of the possibilities of successful delivery through the vagina. It requires much experience and years of patient, persevering study to acquire the skill and obstetric judgment necessary to deliver safely and successfully certain cases by the natural route, but if every woman with the prospects of a difficult labor is to be submitted to an immediate Cesarean section, there is no need to know the mechanism, to acquire the experience and develop the skill for delivery through the birth canal. Such teaching and such practice will make even worse a condition which is already bad enough, namely that the average physician knows little of the mechanism and conduct of labor in normal cases and nothing in abnormal ones.

Dr. J. J. Rectenwald, Pittsburgh: There is one class of patients that invariably needs Cesarean section. Where a ventral fixation has been performed, as the uterus develops the cervix is frequently tipped up and the body down. When a mother has given birth to a number of dead babies who were evidently well until the time of parturition and who lost their lives on account of a narrow pelvis, it is well to bring on labor at seven and a half or eight months by simply inserting a flexible catheter into the uterus. Remove the instrument in twenty-four hours, and repeat in twenty-four hours if necessary.

I wish to mention one case where I delivered a woman of a living child, after she had lost eight, death in each case being caused by a short cord wrapped two or three times about the neck, the labor being protracted. I put on the forceps early and kept up a steady traction until the child was born.

The obstetrician who prefers a Cesarean section to a high forceps operation will some day see his folly and, returning to the forceps, will put them on and work with the pains, slowly and without excitement.

Dr. Frederick A. Rhodes, Pittsburgh: I would like Dr. Miller to answer what is meant by a test of labor. Does Dr. Davis determine before or after operation and recovery or death of the patient? We must remember that the science of obstetrics still exists and that the pelvis and head of the child are so developed and constructed that time and pains of labor do assist in the delivery of the child. Some one has said that eighty per cent. of cases having a borderline measurement of the true conjugate will deliver themselves spontaneously. Let us suppose that there were two clinics arranged for this convention, one a Cesarean section on a woman whose pelvis suggested, by measurements, that there might be trouble in delivery, and the other clinic an obstetrical one, the woman having exactly the same kind of a pelvis. In the latter case assurance would be given that a demonstration would be given of how to wait and allow, probably with assistance, the woman to give birth to a living child through the natural passages, without great danger to herself. Which clinic would have the greater attendance?

I maintain that it takes a better man to tell "when to use forceps" than "how to use them." The same can be said for abdominal Cesarean section. Jeannin said that Cesarean section is easy and elegant in the first operation. We know this is true. The operation is easier than many of our abdominal operations. We can elect our time and avoid long hours of waiting, gain much applause from the gallery and better fees. Some physicians have had over one thousand cases without any maternal mortality. I believe in the best care of the expectant mother, but which is the better in the long run, of operating on all women whose pelves do not measure up to a given standard, saving more babies and losing two per cent. of these elective cases, or not measuring at all and allowing nature to do her best? Of course I do not advise such treatment. In 400 cases in which I have satisfactory records of measurements of the pelvis and the child's head, I find there were 31 in which the external conjugate was 17 cm. or under; 21 were 16.5 cm. or under; 3 were 16 cm., and 1, 15.5 cm. You can guess at the true conjugates. The closed fist in the vagina is the best method of determining the size of the passageway.

All of the above-mentioned were delivered the natural way: 22 delivered themselves, 28 children survived, 1 was still born, 1 died in eight hours (a shoulder presentation, delivered by version); and 1 died in forty-eight hours. In the several hundred other cases there were many with small pelves. I have not had any maternal mortality. There have been stillbirths, I grant a very few might have been operated upon with advantage, but still I am fairly well satisfied with the record.

I have done one abdominal Cesarean operation; the mother had had two such operations previously. Mother and child are living. Recoveries 100 per cent. I have done two vaginal sections for eclampsia.

Peterson says, "There is much uncertainty as regards pelvic measurements, until a patient with a medium contraction of the pelvis, say with a conjugata vera of 8 cm. or 9.5 cm., has had a test of labor, it is impossible to say whether she will be able to have a child through the natural passages or not." E. P. Davis says, "The exact size of the fetal head can not be ascertained."

It is not fair to say that all patients in cases of sections who recover were not infected unless no examinations had been made. Even then it is not true for the vagina frequently contains many pathogenic bacteria. The man who does Cesarean section is to a certain degree responsible for future deliveries, unless the operation was compulsory.

I am perfecting a plan of measuring the pelvis which I believe will assist us very much. This will be demonstrated in the near future.

As we have advised against the too free use of forceps, let us also remember that although pituitrin is a very valuable drug, it can do very much harm. It is more valuable to the physician than to the patient.

Dr. William E. Parke, Philadelphia: During the current year I have done seven classical Cesarean sections, one Porro, and one vaginal Cesarean section. Of these abdominal Cesarean sections, only three of the patients were free from grave illness at time of operation, the indication for operation in each being a contracted pelvis; all the mothers and two of the babies lived. One operation was done for placenta prævia: the mother lived, the baby was stillborn. Two were done for eclampsia; both mothers lived and one baby. One was done for threatened eclampsia; mother and baby lived. The indications for these operations were pregnancy at or near term; nulliparous vagina and cervix; unengaged presenting part and living baby. And, finally, one was done for acute cardiac dilatation and edema of the lungs, complicating nephritis. This patient died about thirty-six hours after operation in a convulsion. The baby survived only a short time.

THE OPERATIVE PROCEDURE IN TREATMENT OF GUNSHOT WOUNDS OF THE STOMACH AND INTESTINES.

BY JOHN A. KLUMP, M.D.,
Williamsport.

(Read before the Bradford County Medical Society, October 3, 1914.)

By gunshot wounds it is customary to include all wounds produced by missiles propelled by means of any sudden, violent, expansive force; be that any form of fire-arm or other explosive force by which bullets or fragments of any kind are thrown with high velocity.

Until a recent period, all penetrating wounds of the abdomen, which opened any portion of the hollow viscera, were considered hopeless. Owing to the frightful mortality from this class of injury, the elder Gross urged the closing of wounded intestines by operation; but he did not persuade the surgeons of his time to his belief. About 1881, J. Marion Sims advocated operation for all gunshot and stab wounds of the abdomen, and largely through his efforts, and by his example, this soon became the recognized practice; and the question of operation in these cases was supposed to have been settled for all time, but certain conditions arose that again changed this into an unsettled question, especially in so far as military practice is concerned.

The experience of military surgeons in all recent wars, the Spanish-American, the Boer, the Japo-Russian, and the Balkan, proves beyond question that the precentage of fatalities in gunshot wounds of the abdomen was far greater in cases operated on, than in those that were treated expectantly. In explanation of this fact, the difference of the character of the wounds inflicted by the modern guns and projectiles and the wounds produced by the old style weapon is given as the chief factor influencing the result. Wounds inflicted by a rifle of high power, throwing a steel-jacketed bullet of small caliber, are usually clean cut, much like an incised wound; the tissues are split, rather than torn apart, and it is possible that under favorable conditions the small hole in the bowel wall may be plugged by prolapsing mucous membrane, and sealed over by the agglutination of the peritoneal surfaces, before leakage of bowel contents occurs. The comparatively empty alimentary tract, which is usual with the soldier in battle, is a factor favoring this spontaneous closure.

This result could not be expected in injuries inflicted by the ordinary gun, of low power, and soft leaden bullets, which produce dirty, ragged, contused wounds, that readily slough, and become gangrenous.

Gunshot wounds of the soldier to-day are not as fatal, untreated, as formerly, but there are other factors which the condition of warfare produce, which have more to do with the results in military practice than has the character of the wound. Under the conditions of warfare, prompt operative treatment is not possible, the long period of time, which must of necessity elapse before these cases reach the field hospital, and are in turn cared for, is the chief cause of the high death rate of cases operated upon on the field, which is not far from ninety-five per cent. Besides this delay in reaching the hospitals of the army, there are not the conveniences for careful transportation, nor the skilled assistant in field hospitals, necessary to properly care for these cases; and the rush and confusion, which is always present in time of battle, will not permit of the handling of these cases as they are cared for in civil practice. Transportation must of necessity be rough and damaging in time of battle.

Minutes before operation count for or against fatality in gunshot wounds of the alimentary canal, more than in any other kind of injury. Death from hemorrhage or septic peritonitis will result in a very few hours as a rule, and, after ten or twelve hours elapse, these cases are usually in such serious condition, that most of them are hopeless. By *early* operative treatment, in a modern hospital in civil practice, the percentage of recoveries ranges from fifty to eighty-five per cent., the results bearing a direct ratio to the length of time elapsing from time of injury until reaching the operating table, the degree of individual operative skill being equal.

The conditions of war, and those of civil practice are not parallel: In civil practice, immediate operation is recognized, the world over, as the proper treatment. Only in those cases where the wound of entrance is in the upper thoracic belt, and we have reason to believe the stomach has escaped injury, or the liver alone has been penetrated, and symptoms of hemorrhage are absent, it is permissible to wait. In the treatment of these cases much is gained by not probing the wound, and by not exciting peristalsis by manipulation and examinations. It adds largely to the danger, and but little definite information is to be gained by probing wounds of the abdominal wall.

The first aid dressing should be simply to cover the wound by a sterile dressing until the patient can be transported to the nearest hospital. Careful preparation of the surface must always be made, as for any abdominal operation, before further surgical attention is given the patient. The use of hydrogen gas for diagnostic purposes is mentioned only to be condemned. The element of time in its use operates against the patient's chances for recovery, more than the information obtained would improve them. In order to make certain that no openings are overlooked, it could be useful, near the completion of the operation and before closing the incision, or, in cases where but a single opening is discovered in the stomach wall, inflation through this opening by means of air or hydrogen, would quickly demonstrate the presence of other perforations if present; a bullet wound of the stomach has usually a wound of entrance, and wound of exit, but there may be three or more openings, and again, in some unusual cases, but a single perforation is present.

In cases where the omentum or intestine, or their contents, protrude through the wound of entrance, giving positive evidence of the peritoneum having been penetrated, the abdomen should be opened in the median line (or elsewhere, as may be deemed best): but where we are not sure the peritoneum has been penetrated, the wound of entrance shoud be carefully enlarged, until this fact can be determined by sight or touch.

After the abdomen has been opened in the most likely convenient location, for treating the kind of injury we may expect to meet, a most careful and systematic search of all of the viscera that could possibly have been injured should be made. Bullets of low velocity are readily deflected from a direct course, and it is an easy matter to overlook some of the perforations. In opening the abdomen, first the hemorrhage should be controlled, when present, after which it is usually best to commence at the ileum, where it enters the cecum, and pass the whole of the small intestine through the hand, between the fingers, until the upper end is reached, carefully protecting each coil from chilling while it is being examined, replacing each coil examined, before drawing along the next. In case injuries are found, they should be promptly repaired, before going further with the examination, unless hemorrhage is apparent, in which event, its control is the first thing indicated. It is important to cleanse these wounds before closing, and this can be best accomplished, by carefully wiping with a sponge (gauze) moistened in salt solution, or by irrigation with salt solution if fecal matter has extravasated. Openings in the bowel should be closed without further preparation when not too large, trimming up the rough edges not being necessary. The smaller openings can be closed by purse string suture, inverting the edges, but large openings should be sutured, transversely to the lumen of the gut, by some one of the usual intestinal sutures. Where a number of wounds are in close proximity, or where considerable of the lumen of the gut is destroyed, resection is usually necessary.

In no case should the normal lumen of the gut be diminished more than one-third. Where the mesentery has been injured, affecting the blood supply to a segment of bowel, the section of gut affected must of course be resected. After examining the small bowel, the large bowel should be searched, then in turn the stomach, gall bladder, liver, pancreas, spleen, the urinary bladder and the kidneys. In those cases where the course of the bullet is certainly known, it is usually safe to limit the search to the particular locality the bullet traversed, but it must be borne in mind that bullets frequently break into numerous fragments, and the course of each fragment may be different. It is a common error to overlook some of the gunshot injuries.

The injured viscera having been repaired, it is not usually wise to search for the bullet. If it has traversed the peritoneal cavity, it can be located if it gives offense, by skiagraph, at a future time.

These cases usually require drainage, especially if there has been extravasation of fecal matter, and in such cases, as has been previously stated, the abdominal cavity should be thoroughly flushed and cleansed; the tract of the bullet is septic, and should always be drained.

In conclusion, I can not do better than quote the following, from the writings of Douglas: "The effects of any penetrating wound of the abdomen are problematical. Their nature is uncertain; the tract is always septic; the number of perforations unknown. Complications can not be foretold. If a ball of average velocity enters the abdominal cavity, perforation is to be expected. That it may find its way between the interstices of the intestines we have previously admitted as a possibility; but that it may produce perforations of the intestines from one to twenty-eight in number, is a recorded fact. If solid viscera lie in its course it will traverse these, and in all probability, will wound other viscera. Multiple perforations occur most frequently in the ileum, and are oftenest made by bullets that pass through the abdomen obliquely from side to side."

PROPAGANDA FOR REFORM.

PHENOLAX WAFERS. These are tablets said to contain phenolphthalein one grain, "aromatics" and sugar enough to make five grains. It is a question what purpose the "aromatics" and sugar serve, perhaps these are to mislead the unthinking to believe that this combination has some mysterious value over phenolphthalein itself (*Jour. A. M. A.*, Oct. 17, 1914, p. 1410).

HEMO. The Thompson Malted Food Company, Waukesha, Wis., which sells hemo, malted milk and malted beef peptone, offers its stock to physicians with promises of large profits. Hemo is advertised as "the food that builds up weak stomachs" and is stated to contain "the iron of spinach, the juices of prime beef, the tonic properties of selected malt in powdered form and the richest sweet milk." Hemo is "promoted" by absurdly extravagant claims and pseudoscientific nonsense. Disregarding the question whether or not this is a stock jobbing scheme or whether the purchase of the stock is a good investment, physicians who buy the stock and prescribe the firm's output are not giving their patients a square deal (*Jour. A. M. A.*, Oct. 24, 1914, p. 1494).

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ATHENS, JANUARY, 1915.

"BORDERLAND TOPICS IN OPHTHALMOLOGY AND OTOLARYNGOLOGY."

Borderland studies are always interesting and especially so when well presented. In the present issue will be found an article from the pen of Dr. Joseph C. Beck of Chicago, which is timely, full of interest and worthy of close study. He calls attention to the fact that there are specialists and specialists and especially emphasizes the fact that simply because a man follows a specialty which is usually classed as a surgical specialty it does not necessarily mean that he is a surgeon. No matter how much time has been spent in preparation, or how well prepared from a theoretical standpoint, unless the individual has some mechanical instincts he will never become a real surgeon. Furthermore a man may be a very good so-called general surgeon, yet fall short in any one of the so-called surgical specialties. Dr. Beck also emphasizes the importance of team work. We not infrequently see poor work as the result of overconfidence and the failure to resort to systematic team work. There is no doubt but that the ideal specialist is the one who knows something about everything and everything about something.

E. B. H.

COMMON THERMOMETERS.

Our instruments of sanitation are often crude, and when perfect we often fail to make the most of them. Take, for instance, the thermometer. It is recognized now that for purposes of ventilation (the term is not good; suppose we say "best atmospheric surroundings") the temperature of the air is of great importance. This is especially true of school-rooms. Pupils do not make the best progress when the temperature of the room runs above or even falls below a certain point, and, not to mention the health of the children, since we are so anxious lest we do not get all we should from the schools for the money we put into them it is imperative that the temperature of the room be properly regulated. Thermostats are scarce, are often crude, and are frequently out of order so that we must fall back upon the thermometer. Unfortunately, the commonest kind of thermometers are usually chosen for use. If a dozen of these instruments are placed side by side, scarcely two of them will indicate alike, and there will often be a variation of six degrees. Now if the temperature of a room is to be kept below 70° and the mercury lies six degrees below a correct reading, it will readily be seen that the temperature will be 76° when the instrument says it is 70°. This would certainly be a sad state of affairs if a clinical thermometer were so inaccurate, and yet the detection of a fever heat in a room as affecting forty delicate nervous systems would seem to be of considerable moment. It may be wise for the time to allow a clinical fever to remain. It is not wise to maintain atmospheric fever heat for a moment longer than is necessary.

In the library of a certain university there has been hung recently, by the side of the long-resident vertical thermometer one of the new dial temperature-indicators. There is a discrepancy of four degrees in the readings of the two, yet no one has been sufficiently interested to find out just which one is correct, and the astute librarian has taken as his guide the point halfway between the two readings. Taking 70° as the proper temperature he sees that one thermometer registers 68° and the other 72°. As there are all sorts of variations of temperatures in the big room, according as one is near or distant from an open window, the reading of those thermometers is not of so much consequence. And this leads to the matter of the placing of thermometers.

Two thermometers which register alike when placed side by side may differ in their readings when hung in different parts of a room. If there are two accurate thermometers the average of their readings may be taken, and if there is but one it should be hung in such a place as to give an average reading for the room. Evidently it should not be hung near the door, a window or the stove or radiator.

The continuous and complete circulation of air is of great importance in ventilation and if there is a proper circulation the reading of a thermometer in a large room (drafts being eliminated) should be practically the same everywhere except near its openings.

Thermometers have, heretofore been difficult to read and it has taken time to visit them frequently. It was not to be wondered at that a teacher who always has her hands full should allow the temperature to mount unduly. Thermometers are now being put on the market which can be read at a glance, and there is less excuse for super-heating. It is not unlikely that a thermometer may be invented which can be set like an alarm clock, so that when the mercury goes up or down to a given point a buzzer or bell will be set going.

Where there is a possibility of being more exact in our methods of sanitation by the small cost of an accurate thermometer, and one that can be easily read, it is inexcusable to be as careless as we usually are in the matter of the heating of rooms. J. F. R.

POISONOUS FLY DESTROYERS.

The December issue of the *Journal of the Michigan State Medical Society* calls attention editorially to the danger of using poisonous fly destroyers.

From July 1 to October 15, 1914. forty-five cases of poisoning of young children were reported in the press of a few states, and it is pointed out that the symptoms of arsenical poisoning and cholera infantum being very similar there are possibly many more cases of the kind. In view of this danger it might be well for physicians to eliminate the possibility of arsenical poisoning before diagnosing a case as cholera infantum. A few years ago there was considerable agitation against the use of phosphorous matches, partly because of some children being poisoned by eating or sucking the heads of the matches. There are doubtless many more cases of the poisoning from the poisonous fly destroyers. Phosphorous matches have been abolished, so should be poisonous fly destroyers.

It seems that this danger has already been recognized by the authorities in far away South Africa and the sale of certain arsenical fly destroyers, more particularly the tin boxes which have a wick or wicks through which the poisoned water is drawn, has been forbidden, except by licensed chemists. The fact that sugar is added to draw the flies makes these boxes especially dangerous to young children; furthermore, all these poisonous fly destroyers are usually placed on the window sill and the poisons are thus within their reach.

Both the blotting paper impregnated with arsenic (which is put in an open saucer with water and sugar) and the tin boxes with wicks to draw the poisoned water to the surface are extensively used and there is probably no poison so commonly and unnecessarily used where it is perforce within the reach of young children as these various arsenical fly destroyers. In country homes where it often takes some hours to get a physician, and even in our cities among the foreign born where the parents are, as is well known, slow to call the services of a physician for childish ailments, the danger is especially great. There are as effective and more sanitary ways of killing flies. Poisonous fly destroyers are an unnecessary evil and should be relegated to the past like the phosphorous match. S.

ANNUAL DUES.

The annual dues for 1915 are now payable to the several county societies. Some five hundred members paid these dues before the close of 1914. For most of our members it is just as easy to pay at once as it is to wait for a few weeks or months, and prompt payment will obviate considerable work for the local secretary, who has troubles and work enough without having to make a personal appeal for your dues.

The usual annual list of officers and members of county societies to be published soon will contain only the names of those who have paid their dues for 1915. No other list will be published during the year. Heretofore the list has contained the names of many who had not paid their dues and of a considerable number who were soon afterwards dropped by the county societies for nonpayment. Dues need to be paid but once in twelve months and it is no longer from January to January than it is from July to July. If you have not already done so kindly send your check to your local secretary. S.

GAME, STOCK AND CITIZENS.

The epidemic of foot-and-mouth disease and its effect on the packing industry and the stock yards of Chicago have been commented on widely in the daily press from various points of view. One of the most illuminating comments appears in a recent issue of the Chicago *Journal* under the heading "Live Stock Versus Quail." Taking the best available estimates of the amount of live stock contained in the state and figuring on an average value of horses at $140 a head, milk cows at $65, other cows at $50, swine at $15, sheep at $6 and mules at $150 (minimum valuations, as most will admit), the *Journal* says the total value of live stock in Illinois would be $435,276,000, for the protection of which the state legislature appropriated for the current year a total of $37,340. By way of comparison, the *Journal* quotes the appropriation for the protection of fish and game for the same time, which amounts to $151,600. The *Journal* properly characterizes such a situation as "intolerable." It says, "To spend four times as much money protecting quail, ducks and prarie chickens as we spend in caring for one of the basic industries of the state is sheer communal lunacy." This is true. The farmers and business men of Illinois should see to it that every cent that is necessary to protect the live stock of the state is provided, no matter what economics may be necessary in other directions. But, asks *The Journal of the American Medical Association*, if such appropriations are justified for the protection of the lives and health of animals, how much should be appropriated to protect the lives and health of the men, women and children of the state? Certainly more than for fish, game and live stock. Yet the appropriation for the protection of the 5,638,591 men, women and children in the state was for 1914 only $120,000, $30,000 less than was appropriated for the protection of fish and game. Are the lives of its citizens of less value to Illinois than the preservation of its quail and bass? S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the December Journal was printed:—

Adams County: *Transfer*—Robert E. Lau to York County Society.

Allegheny County: *New Members*—Guivino Alvino, Vernon L. Andrews, Lucian C. Fausold, Pasquale Ferrari, William A. Forster, Maurice F. Coldsmith, Cyril F. Lauer, John H. Seipel, Martin C. Taylor, Pittsburgh. *Transfer*—Charles Homer Bair to Lancaster County Society.

Cambria County: *Removal*—Alfred N. Wakefield, from Johnstown to Port Clinton, Ohio.

Chester County: *Death*—James S. Eves (Univ. of Pennsylvania, '62) in New London, December 17, from cerebral hemorrhage, aged 66.

Clearfield County: *New Member*—Louis W. Wright, Glen Richey. *Removal*—Francis G. Bennett from Clearfield to 105 Brusselles St., St. Marys (Elk Co.); C. Gleni McNaul from Glen Richey to Juniata (Blair Co.).

Clinton County: *Removal*—Howard S. Kinne from Greensboro, N. C., to The Altamont, Willow Grove (Montgomery Co.).

Crawford County: *New Member*—Edward M. Hamaker, Meadville.

Columbia County: *New Member*—Howard R. Rarig, Bloomsburg.

Delaware County: *New Members*—Clifford H. Arnold, Chester (by transfer from Montgomery County Society); Isaac I. Parsons, Media.

Elk County: *Resignation*—Charles C. Neff.

Fayette County: *New Members*—Benjamin P. Doran, Andrew G. Opinsky, Uniontown. *No Longer Members*—Charles R. Lakel, Henry H. McIntire, Henry R. Parker. *Removal*—Charles C. Gans from Point Marion to Jacksonville, Fla.

Franklin County: *Deaths*—Johnston McLanahan (Jefferson Med. Coll., '65) in Chambersburg, December 13, from valvular heart disease, aged 70; Robert Walker Ramsey (Jefferson Med. Coll., '74) in Chambersburg, December 26, from arthritis deformans, aged 54.

Greene County: *New Member*—Amanda R. Core, Carards Fort. *Removal*—Brontz L. Cowen from Waynesburg to Monessen (Westmoreland Co.).

Jefferson County: *Deaths*—Addison H. Bowser (Western Reserve Univ., Cleveland, '85) of Reynoldsville, in Warren, December 8, aged 52; John Wesley Foust (Jefferson Med. Coll., '67) in Reynoldsville, December 26, from apoplexy, aged 70.

Lancaster County: *New Member*—Charles Homer Bair, Lancaster (by transfer from Allegheny County Society). *Resignations*—Samuel M. Lichty, Harry F. Myers.

Lehigh County: *Death*—Aaron S. Miller (New York Univ., Med. Coll., '62) in Saegersville, December 31, aged 75.

Luzerne County: *New Member*—Harry Rubenstein, Pittston.

Lycoming County: *No Longer Members*—Howard M. Essick, James R. Rankin.

Mercer County: *New Member*—Edward N. Hagin, Sharon.

Montgomery County: *Transfer*—Clifford H. Arnold to Delaware County Society.

Northampton County: *Resignation*—Thomas B. Kern.

Northumberland County: *New Member*—George G. Gill, Sunbury. *Death*—John W. Bealor (Washington Univ. School of Medicine, Baltimore, '76) in Shamokin, December 11, from cerebral hemorrhage, aged 60.

Philadelphia County: *Death*—James A. Wamsley (Jefferson Med. Coll., '76) in Philadelphia, December 7, aged 63. *Removals*—Eleanor F. Boulton from Philadelphia to 269 West Twelfth St., New York City; Walter E. Kiefer from Philadelphia to 821 Cooper St., Easton (Northampton Co.).

Schuylkill County: *Deaths*—Frank McWilliams (Univ. of Pennsylvania, Med. Dept., '99) in Schuylkill Haven, December 16, from pneumonia, aged 40. J. Henry Swaving (Univ. of Pennsylvania, '89) in Pottsville, December 30, from apoplexy, aged 47.

Warren County: *Removal*—Theodore Jones from Sheffield to West Hickory (Forest Co.).

York County: *New Member*—Robert E. Lau, York (by transfer from Adams County Society). *No Longer a Member*—William J. Schenberger.

Present membership 6602. S.

PAYMENT OF PER CAPITA ASSESSMENT.

The per capita assessment for the period from September 1, 1914, to January 1, 1916 has been received from component county societies as follows:

Oct. 31,	Northumberland	1-2		$ 5.50
	Allegheny	1-36	3-[illegible]	99.00
	Bradford	1-3	39-41	8.25
Nov. 5,	Dauphin	1-12	[illegible]	33.00
	Northumberland	3-10	61	22.00
Nov. 6,	Mifflin	1-9	62-[illegible]	24.75
Nov. 9,	Bucks	1-12	71-82	33.00
Nov. 10,	Dauphin	13	83	2.75
Nov. 11,	Clearfield	1	84	2.75
	Mifflin	10-11	85-86	5.50
	Lehigh	1-5	87-91	13.75
Nov. 13,	Bucks	13-27	92-105	38.50
Nov. 14,	Allegheny	37-39	106-108	8.25
	Washington	1-36	109-144	100.00
Nov. 16,	Mifflin	12	145	2.75
	McKean	1-5	146-150	13.75
Nov. 18,	Mifflin	13	151	2.75
Nov. 19,	Clearfield	2-15	151-165	38.50
Nov. 20,	Lehigh	6	166	2.75
Nov. 21,	Somerset	1-13	167-179	35.75
Nov. 24,	Fayette	1-30	180-209	82.50
Nov. 25,	McKean	6-8	210-212	8.25
	Franklin	1-2	213-214	5.50
	Allegheny	40-41	215-216	5.50
Nov. 27,	Venango	1	217	2.75
	Elk	1-7	218-224	21.75
Nov. 30,	Lehigh	7-8	225-226	5.50
Dec. 2,	Mifflin	14	227	2.75
	Philadelphia	1-21	228-248	57.75
	Mifflin	15	249	2.75
Dec. 3,	Dauphin	14-19	250-255	16.50
	Northumberland	11-20	256-265	27.50

	Lancaster	1-21	266-286	57.75
	Westmoreland	1-21	287-307	57.75
	Elk	8-9	308-309	4.00
Dec. 4,	Lancaster	22	310	2.75
Dec. 5,	Jefferson	1	311	2.75
	Elk	10-11	312-313	4.50
Dec. 7,	Bucks	28-38	314-324	30.25
Dec. 8,	Snyder	1	325	2.75
	Westmoreland	22-24	326-328	8.25
	Allegheny	42-46	329-333	12.75
	Bradford	4-10	334-340	19.25
Dec. 9,	Mifflin	16-17	341-342	5.50
Dec. 10,	Lehigh	9-11	343-345	8.25
	Columbia	1-4	346-349	11.00
Dec. 12,	Columbia	5-12	350-357	22.00
	Erie	1-8	358-365	22.00
Dec. 16,	Beaver	1-6	366-371	16.50
Dec. 17,	Franklin	3-5	372-374	8.25
Dec. 19,	Allegheny	47-49	375-377	8.25
	McKean	9-14	378-383	16.50
	Clearfield	16-24	384-392	24.75
	Northampton	1-10	393-402	27.50
Dec. 21,	Crawford	1-3	403-405	8.25
Dec. 26,	Delaware	1-2	406-407	5.50
	Wayne	1-22	408-429	62.00
Dec. 30,	Columbia	13	430	2.75
1915.				
Jan. 2,	Clinton	1-5	431-435	13.75
	Westmoreland	25-26	436-437	5.50
Jan. 4,	Bucks	39-41	438-440	8.25
	Blair	1-8	441-448	22.00
Jan. 7,	Northumberland	21-31	449-459	30.25
	Westmoreland	27-45	460-478	52.25
	Lancaster	23-34	479-490	33.00
Jan. 8,	Dauphin	20-39	491-510	55.00
	Allegheny	50-68	511-529	52.25
Jan. 9,	Monroe	1-6	530-535	16.50
	Wyoming	1-9	536-544	24.75
	Montgomery	1-24	545-568	66.00
	Armstrong	1, 3-19, 22-28	569-593	68.75
Jan. 11,	York	1-43	594-636	118.25
	Juniata	1, 3-8	637-643	19.25
Jan. 12,	Berks	1-10	644-653	27.50
	Snyder	2-8	654-660	19.25
	Fayette	31-51	661-681	57.75
	Luzerne	1-21	682-702	57.00
	Bradford	11-17	703-709	19.25
Jan. 13,	Snyder	9	710	2.75
	Dauphin	40-42	711-713	8.25
Jan. 14,	Berks	11-40, 42-43	714-745	88.00
	Mifflin	18-19	746-747	5.50
	Greene	1-7, 10, 13	748-756	24.75
	Crawford	4-15	757-768	33.00
	Wyoming	10-12	769-771	8.25
	Mercer	1-25	772-796	68.75
Jan. 16,	Perry	1-10	797-806	27.50
	Juniata	2, 9	807-808	5.50
	Wyoming	13-14	809-810	5.50
	Potter	1-14	811-824	38.50
	Lehigh	12-28	825-841	46.75
	Northampton	11-37	842-868	74.25
	Adams	1-2	869-870	5.50
	Elk	12-17	871-876	16.50
	Cumberland	1-19	877-895	52.25
	Beaver	7-17	896-906	30.25
	Cambria	1-30	907-936	82.50
Jan. 18,	Montour	1-11	937-947	30.25
	Berks	44-48	948-952	13.75
	Mifflin	20	953	2.75
	Bradford	18-19	954-955	5.50
	Northumberland	32-34	956-958	8.25
	Snyder	10	959	2.75
Jan. 19,	Huntingdon	3, 11, 14, 18, 28-32, 37-39	960-971	33.00
Jan. 19,	Schuylkill	1-17	972-988	46.75
Jan. 20,	Dauphin	43-49	989-995	19.25
	York	44-48	996-1000	13.75
	Westmoreland	46-49	1001-1004	11.00
	Clearfield	25-27	1005-1017	35.75
	Jefferson	2, 3, 5-17	1018-1032	41.25
	Lawrence	1-13	1033-1045	35.75

C. L. Stevens, Secretary.

STATE NEWS ITEMS.

BORN.

To Dr. and Mrs. John H. W. Rhein, Philadelphia, on January 5, a son.

MARRIED.

Dr. Harry Etter and Miss Helen Stough, both of Shippensburg, November 26.

Dr. William B. McKenna and Miss Clementine Keyl, both of Pittsburgh, January 21.

Dr. Walter M. L. Zeigler, Philadelphia, and Mrs. Mary Alice Dolson, New York City, November 28.

DIED.

Dr. Charles B. Warder (Jefferson Med. Coll., '85) in Philadelphia, January 5.

Dr. Henry Roberts (Jefferson Med. Coll., '48) in Towanda, December 31, aged 93.

Dr. Frederick W. Kohler (Jefferson Med. Coll., '82) in Philadelphia, November 27.

Dr. Robert Liggett McGrew (Bellevue Hospital Med. Coll., '86) in Pittsburgh, recently, aged 54.

Dr. Andrew S. Low (license, years of practice, Pennsylvania, '88) in Philadelphia, November 9, aged 77.

Dr. John Winfield Reith (Hahnemann Med. Coll., Philadelphia, '05) in Lancaster, December 9, aged 32.

Dr. Alexander P. O'Malley (Med. Dept., New York University, '76) in Wilkes-Barre, December 12, aged 62.

Dr. James T. Strohecker (Jefferson Med. Coll., '79) in Beavertown, December 15, from heart disease, aged 62.

Dr. James Harper Ramsey (Western Reserve Univ., Cleveland, '71) in West Bridgewater, November 25, aged 79.

Dr. Ella Averill Patterson (Woman's Med. Coll., Philadelphia, '01) of Butler, in Philadelphia, December 17, aged 36.

Dr. J. Winter Wamsley (Jefferson Med. Coll., '93) in Philadelphia, December 21, from internal hemorrhage, aged 40.

Dr. Clarence Howard Hagmeier (Western Pennsylvania Med. Coll., Pittsburgh, '13) in Reading, December 15, from septicemia, aged 28.

Dr. Roland Hocking Gilman (Medico-Chirurgical Coll., Phila., '14) of Williamsburg, in Reading, December 17. from pleuropneumonia, aged 26.

ITEMS.

Dr. William S. Newcomet has been appointed radiotherapist to the Jefferson Hospital.

Dr. Charles W. Burr has been appointed consulting neurologist at the Municipal Hospital.

Dr. W. J. Crookston, Pittsburgh, sailed December 30 to join the Red Cross work at Budapest.

Dr. Theodore L. Hazlett, Pittsburgh, has been appointed an assistant surgeon in the third Russian Red Cross Unit and sailed for Europe last month.

The Chester County Hospital receives the sum of $71,376.85 from the distribution of the estate of the late Townsend S. Lamborn of Bradford Township.

Dr. S. Lewis Ziegler has been appointed Director of the Department of Public Health and Charities of Philadelphia in place of Dr. Richard H. Harte, resigned.

Farmer's Institute and Public Health. Dr. J. J. Coffman, Scotland, addressed the Farmer's Institute held at that place January 11, on Health and Wealth in the Country.

Dr. S. A. Woods, who was reported last month as having removed to Farrell is living and practicing in Sharon, his stay in Farrell being only temporary during an illness.

Many Hunting Accidents. Forty-one fatalities and eighty-four other serious accidents are reported during the hunting season of 1914. Evidently hunters think little of "Safety First."

Dr. Peter N. K. Schwenk has resigned from the medical staff of the Pennsylvania Hospital, after thirty years of service. Dr. Schwenk was presented with a loving cup by the members of the staff. Dr. George S. Crampton has been elected to fill the vacancy.

Tuberculous Children Attend New School. The Board of Education of Philadelphia has had prepared a small building on the Girard School Property, where a class of twenty children suffering from symptoms of tuberculosis began school in an open air class room.

New Buildings for Hospital. Plans for a group of seven buildings to replace the present structure occupied by the Presbyterian Hospital, 39th and Filbert Streets, Philadelphia, are being prepared. It is estimated that the new structure will cost more than $1,000,000.

Medical Fraternity Meets in Philadelphia. Two hundred physicians and medical students attended the national convention of the Nu Sigma Nu medical fraternity held in Philadelphia November 28. Practically all the medical schools in America were represented by delegates.

Philadelphia Surgeons for Paris. It is announced that Drs. James William White, John B. Deaver and Charles H. Frazier and six other surgeons of Philadelphia will soon sail for Europe to take charge of a ward, endowed by Philadelphians, in the American Ambulance Hospital, Paris.

Dr. George K. Binkley, Orwigsburg, a member of the Schuylkill County Medical Society and president of the Southern Medical Society of Schuylkill County, has announced his intention to build a hospital at Schuylkill Haven which will become the property of the latter society at the end of his life. The hospital will cost $25,000.

Memorial to Dr. John Morgan. Plans are being discussed by the John Morgan Memorial Committee of the Philadelphia Alumni Society, Medical Department, University of Pennsylvania, looking towards the erection of a suitable memorial to Dr. John Morgan, the founder of medicine in the United States.

Tuberculosis in Nanticoke Schools. Reports from the school officials in the Hanover Section of Nanticoke show that out of the 400 children attending the schools, 99 are suffering from tuberculosis in the various stages. Dr. Carl Shaffner of the State Health Department went to Nanticoke January 15 to take charge of the situation.

Dr. James W. Macfarlane, after thirty-seven years of active service on the staff of the West Penn Hospital, has retired from service on the active staff and has been made a member of the consulting staff. A banquet in his honor was given at the University Club, Pittsburgh, December 19, by the hospital staff and a silver loving cup was presented to Dr. Macfarlane.

Teaching Care of Babies. The Board of Public Instruction in Philadelphia, at the suggestion of the Child Federation, has established a course of instruction for little mothers in the seventh and eighth grades in some sixteen schools in the city. Dr. Howard Childs Carpenter is giving a series of lectures to the teachers in the Stock Exchange Building.

Philadelphia Nurses Help War Hospitals. A corps of workers composed of graduate nurses organized December 8, at the call of the chairman of the Red Cross Division of the Emergency Aid Commission for the purpose of manufacturing bandages and other surgical supplies for use on European battle fields. The "Made in America" Bazaar Committee has $4000 to turn over to the Red Cross division and a like sum to the Belgian Relief division.

Philadelphia Death Rate. There were 26,941 deaths in Philadelphia during the year 1914, an increase of 1274 over those for 1913. The rate for the year was 16.25 out of every 1000 population, an increase of .52. According to the records of the Bureau of Health, the higher rate for 1914 was due to the greater mortality from bronchial diseases, which was expected owing to the prevalence of whooping cough during the first half of 1914 and from an increase in the diseases of senility. All of the common epidemic diseases, with the exception of whooping cough, show decreased mortality. Noteworthy among these are the following:—

	Deaths—1913.	1914.
Typhoid fever	255	124
Scarlet fever	162	130
Diphtheria and croup	359	333
Measles	199	73

Medical Inspection of Schools in Reading. The following summary was given before the Berks County Medical Society, October 13, by Dr. Hiester Bucher:—

	1913.	1914.
Pupils examined	12857	13013
Without defects	3961 (30.8%)	6399 (49.2%)
With defects	8896 (69.2%)	6614 (50.8%)
Without defects below grade	1121 (28%)	1958 (30.5%)
With defects below grade	1222 (13.8%)	2045 (30.8%)
Defective vision	2266 (18.4%)	2270 (17.5%)
Defective hearing	423 (3.29%)	436 (3.3%)
Enlarged tonsils	4220 (32.8%	2935 (22.5%)
Adenoids	1670 (13%)	1443 (11%)
Mentally deficient	97 (.007%)	96 (.007%)
Wearing glasses	472 (3.7%)	690 (5.3%)
Defects corrected	666 (7.4%)	1498 (22.8%)

Dr. Charles S. Pancoast accepts call to Vienna Hospital Service. Dr. Charles S. Pancoast, son of Mr. and Mrs. Richard M. Pancoast, of Camden, sailed December 15, at noon from New York on the steamer Regena de Italia. Dr. Pancoast is the first Camden physician to go to the battle scenes of the European war. He is but a young man, nearing his twenty-seventh birthday. He is a bachelor. In 1910 he graduated from Medico-Chirurgical College, Philadelphia, and was resident physician at the Pottstown Hospital for a year. He had recently opened offices at 2115 Chestnut Street, Philadelphia, as well as in Camden at the home of his parents. Dr. Pancoast also did hospital work in Polyclinic and Wills Eye Hospitals, Philadelphia. He was a surgeon of the Third Regiment National Guard of Pennsylvania. At the time of his accepting the call he was an assistant examiner of eyes for freshmen at the University of Pennsylvania.

Less Contagious Diseases. Commissioner Dixon in a summary of the work of his Department for 1914 shows that there have been 50,000 fewer cases of communicable diseases during the year than in 1913. Cancer alone of all the various reportable diseases has shown a slight increase during the past few years. Dr. Dixon says in closing —

"The activities of the State has stimulated every sinew in the general public health agencies in the commonwealth. The educational work, which has been carried on since the establishment of this department, has borne excellent fruit. Local boards of health, the press, the philanthropic agencies and, most important of all, the general public, has understood, appreciated and coöperated in the work of bettering conditions. The time is rapidly approaching when every individual will not only act as his own sanitary policeman, but will familiarize himself with those principles of personal hygiene and right living, which will serve more than all else to increase the span of human life and fill to the brim the cup of individual happiness."

Safety First at Home. One of the prolific sources of accident is occasioned in winter time through the people slipping on icy pavements and walks. The Pennsylvania Department of Labor and Industry has been instrumental in aiding in the installation of thousands of guards in workshops, and in these establishments much care will be used by the safety organizations to see that walks are properly sanded or kept free from slippery ice and snow. However, there is a much larger source of danger from this cause through the sidewalks in our cities, towns and villages, which are frequently a menace to those who travel them. It seems worth while that especial attention be drawn to this danger, and the suggestion is made that every person in the Commonwealth who is responsible for a walk, either on his private grounds, about his factory, or on public thoroughfares, make a special point never to permit these places to become slippery and dangerous. If the ice or snow can not be entirely removed, it is but a simple matter to sprinkle a few ashes, a little sand, or some sawdust upon them. Not only will such means save severe suffering and hardship to hundreds of families, but it will save to the Commonwealth large sums of money in human productiveness.

GENERAL NEWS ITEMS.

Drs. Mabel Palliser of Brooklyn and Edith Bertine have been appointed interns to Bellevue Hospital. There are now five women on the staff at Bellevue.

Pennsylvania Railroad Has Record. Out of 188,411,876 passengers carried on all the lines of the Pennsylvania Railroad System during 1914, not a life was lost.

Red Cross Work in Turkey. British and French Hospitals in Constantinople are now being managed by the American Red Cross Chapter in the Turkish capital.

Danger to Operators. Mr. C. B. Lockwood, London, "one of the most distinguished surgeons of the day" contracted acute septicemia while operating on a patient with appendicular peritonitis.

Dr. Frank Billings, Chicago, has been selected to deliver the Lane Lecture for 1915. He is the fifth American to be so honored, the others being Drs. Nicholas Senn, Oscar H. Allis, William H. Welch, and Reginald Heber Fitz.

Denatured Alcohol Fatal. Dr. Don A. Bisbee, a druggist of Middlebury, Vt., was on January 1, sentenced to from twelve to fifteen years for causing the deaths of several persons, by selling them liquor containing denatured alcohol.

Aid for Blinded Soldiers. An endowment fund to aid soldiers who have lost their eyesight from wounds in the war has been started by Frau Minden, who has given the Berlin city authorities 100,000 marks ($25,000) for the purpose.

Council on Pharmacy and Chemistry. During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies: Merck and Co., arbutin, Merck, benzene, Merck, H. P., crystallizable, digitoxin, Merck, silver citrate, silver lactate; E. R. Squibb and Sons, Pyocyaneus vaccine: boxes of 2 ampules containing respectively 100 and 500 million killed bacilli.

Penny Lunch for School Children. Restaurants in twenty-four New York public schools have been opened and cooking classes, under the guidance of experienced teachers, will serve lunch to hungry pupils. Dr. William H. Maxwell, city superintendent of schools, announced at a conference of district superintendents subscriptions amounting to $9000. The cost of any article on the menu will be one cent to the pupil, but to children too poor to pay for food tickets will be distributed by the teachers. The lunches will consist of a meat stew, or soup, fruit and chocolate.

Deaths of Physicians in 1914. During 1914 the deaths of 2205 physicians in the United States and Canada were noted in *The Journal of the American Medical Association*. Reckoning on a conservative estimate of 153,000 physicians, this is equivalent to an annual death-rate of 14.41 per thousand. The chief death causes in the order named were: senility, heart disease, cerebral hemorrhage, pneumonia, accident and nephritis. The age at death varied from 23 to 99, with an average of 60 years, 11 months and 6 days. The general average of age at death since 1904 is 59 years, 9 months and 19 days. The number of years of practice varied from 1 to 75, the average being 33 years, 9 months and 29 days. The average for the past eleven years is 31 years, 11 months and 22 days.

Aid to Belgian Physicians and Surgeons. An appeal made by Sir Rickman J. Godlee of London, chairman of the committee organized in Great Britain in aid of Belgian physicians and surgeons, has resulted in the organization of an American committee which will accept subscriptions in money and surgical or pharmaceutical supplies and distribute them to the best of their ability among the Belgian sufferers. The appeal is accompanied by a contribution by Prof. C. Jacobs of the University of Brussels on "The Position of Belgian Doctors and Pharmacists" and a letter by Sir Gilbert Parker to the Chicago *Tribune*, both of which explain most clearly and vividly the needs of the Belgians. Dr. Frank F. Simpson, 7048 Jenkins Arcade Building, Pittsburgh, has consented to act as treasurer to the American Committee which consists of Drs. William L. Rodman, Philadelphia; Charles H. Mayo, Rochester, Minn.; John M. T. Finney, Baltimore; George H. Simmons, Chicago; Thomas L. Stedman, New York City; Edward W. Taylor, Boston; Franklin H. Martin, Chicago, and Howard Canning Taylor, New York. Contributions should be sent to the treasurer, Dr. F. F. Simpson.

Aid for Belgian Profession. Report of Dr. F. F. Simpson, Pittsburgh, treasurer of the Committee of American Physicians for the Relief of the Belgian Profession, for the week ending December 26, 1914.

Contributions:—

Union Trust Company..........Banking Facilities
Sterrett and Acheson, Attorneys.............. .... Professional Service

F. O.	$ 25.00	S. J. M.	15.00
F. H. M.	100.00	D. B.	25.00
F. F. S.	100.00	E. G. M.	10.00
S. P.	25.00	L. M. W.	5.00
G. C. S.	5.00	A. T.	10.00
S. A.	20.00	J. G. R. M.	25.00
E. W.	25.00	J. C. T.	25.00
B. L.	10.00	L. C. F.	10.15
T. E. S.	20.00	E. T. F.	10.15
T. L. S.	25.00	F. W. S.	10.00
R. S. E.	10.00	G. L. H.	25.00
M. W. R.	10.00	G. E. L.	5.00
W. A. P.	25.00	E. E. K.	10.00
M. C. S.	5.00	A. M. C. O.	100.00
H. F. W.	25.00	D. S. M.	10.00
B. C.	2.50	C. M. B.	1.00
D. W. C.	25.00	M. C. M. S.	25.00
V. P. G.	25.00	H. M. S.	10.00
Mrs. J. B. M.	100.00	E. H. M.	5.00
E. F. B.	5.00		
C. W. N.	25.00		
In memory H. H. C.	10.00	Total	$958.80

Disbursements, none.

BULLETIN EXCERPTS.

Bulletin, ALLEGHENY.

IN PREVIOUS YEARS it has been the custom of the Program Committee to furnish a lunch with alcoholic beverages at the annual election and smoker. The question has arisen as to whether or not this custom detracts from the dignity of our society, granting that every aid to happiness and good fellowship should be requisitioned. At the request of President Hawkins, our committee has decided to put this question squarely up to the society at the December meeting and to ask that a vote be taken as to whether or not we shall change the program, doing away with all intoxicating beverages. It is hoped that a large number of members will be present and we shall cheerfully abide by the resulting decision.

(NOTE: At the meeting intoxicating beverages were ruled out by a vote of more than two to one.—EDITOR.)

Bulletin, ARMSTRONG.

NEXT MEETING. Important, why? Because it is the beginning of another year, a year full of hope, a year that can be made better than the last, for every time you overcome one difficulty you are the better able to surmount the next. Important, for it is at this meeting the officers for the coming year will be selected and elected, and we are sure that the life of the society depends very much on the activity of the officers.

Bulletin, CLEARFIELD.

NEW YEAR RESOLUTIONS.

1. To attend every meeting of the Society.
2. To take part in the discussions.
3. To prepare a paper when requested.
4. To prescribe no proprietaries.
5. To read medicine at least one half hour daily.
6. To charge fees just to self and patron.
7. To use no profanity except in case of blow-outs.
8. To speak well of every reputable physician.
9. To not inconvenience your family by delaying the meal hour when avoidable.

Academician, DAUPHIN.

JUST A HEART-TO-HEART TALK at the beginning of this new year. To have a successful, progressive society we must have harmony, and to have harmony we must not be antagonistic, and to avoid antagonism we must show professional courtesy, and to show professional courtesy let a family physician feel that when he sends his patient to any hospital he can continue as family physician, and not the operating surgeon, when that patient returns home; when he calls a consultant, that the consultant will not quietly return and speak disparagingly of the family physician and alarm the patient and thus "steal" the family; that when he sends a patient to a specialist for an expert opinion, the specialist may have the courtesy to notify the family physician of his opinion; that when he has a surgeon do a minor operation on a patient in his own home that the surgeon will not slip around quietly with a young physician as anesthetist and never notify the family physician who could have given the anesthetic; that he can feel that specialists will not take his patients; that when a patient, unable to pay for prolonged treatment, is sent to a hospital dispensary for free treatment, that he will not be criticized by some snobbish young physician who does not know how to pass his time away at home and whiles it away as a hanger-on member of a dispensary staff. When these things are corrected we shall make all other medical organizations "sit up and take notice," if we may use this vulgar expression. There are one hundred and one other suggestions, and if charity begins at home, let us start while the year is young.

COMMUNICATION.

ADVERTISING LABORATORY FEES.

Pittsburgh, Pa., Dec. 29th, 1914.

Cyrus Lee Stevens, M.D.,
Athens, Pa.

Dear Doctor: I write you to enter my feeble protest against the appearance of such advertisements as that on page one of the December JOURNAL regarding National Pathological Laboratory. There are many men throughout our state who are pursuing the specialty of laboratory diagnosis in an ethical and respectable manner. In many instances these men maintain first class laboratories, and do most thorough work. These men are unable to compete with such advertisers as the National Pathological Laboratory without stooping to similar methods. It is a principle of medical ethics that a man's work should depend upon his own reputation, and that it should not be in any way boosted by advertisement.

The subtle insinuations in the advertisements to the effect that they perform their tests in such a way as to make them more exact than those of others are detestable, and it goes without saying that any members of our State Society practicing laboratory diagnosis with a reputation for the same, are performing their work according to our latest knowledge of the subject. There is one thing particularly objectionable about this laboratory referred to above, and that is the fact that they are conducting two laboratories at the same time at widely separated places, apparently counting on any reputation they may have established in their original location to be of value to them in the new, whereas, it is quite evident that the same man can not work in New York, and Chicago, at the same time.

This whole thing is dead against the high principles of our profession, and I hope that our Journal will take a stand in this matter against all such advertising which simply lowers medicine to the level of ordinary business or trade.

Hoping to hear from you in this matter, I am,

Very truly yours,
(Signed) Ernest W. Willetts.

December 31, 1914.

Ernest W. Willetts, M.D.,
5101 Liberty Ave., Pittsburgh, Pa.

Dear Doctor: Thank you for yours of December 29, calling attention to the advertisement of the National Pathological Laboratory as it appears in the Journal. The advertising question is a difficult one for any conscientious publisher, and I have often been in doubt just what to do regarding the wording of certain advertisements. When consulting those thought to be more competent to decide certain matters, I have been perplexed with the contradictory advice given. When the Council on Pharmacy and Chemistry was established it relieved most of this responsibility though certain advertisements like the one under consideration may not come under the supervision of the Council. Heretofore, whenever any member of the society has objected to any advertisement appearing in the Journal I have at once omitted the advertisement without a moment's question. In more than one case, after paying an agency a cash commission on a contract secured by him, the advertisement has been omitted after its first appearance, the Journal losing the commission paid and the space used, rather than enter into any controversy with either the agent or the advertiser.

The advertisement of the National Pathologic Laboratory was secured by the Coöperative Medical Advertising Bureau, in affiliation with the American Medical Association. A copy of your letter and this reply are submitted to the Bureau for such answer as they may think proper to give in the interest of all concerned. If agreeable to you, your letter and the reply from the Bureau will be published in the Journal. Then, if any one officer of the state society thinks it better for the Journal not to carry the advertisement in question the same will be omitted. At this writing I do not feel competent to enter into the merits of the question.

I am really glad that you have written regarding this matter as it proved two points: First, that the advertising pages of the Journal are read, and second, that the members of the Medical Society of the State of Pennsylvania do not wish its Journal to in any way countenance anything that may not be strictly ethical.

Faithfully yours,
(Signed) C. L. Stevens, Editor.

December 31, 1914.

Coöperative Medical Advertising Bureau,
535 North Dearborn Street, Chicago, Ill.

Gentlemen: Enclosed you will find copy of a letter just received from Dr. Willetts of Pittsburgh and copy of the reply forwarded him. This question is evidently one that needs careful consideration and I shall be glad if you will furnish the Journal a reply for publication.

Thanking you for past courtesies and any attention you may give this matter, I remain,

Cordially yours,
(Signed) C. L. Stevens, Editor.

Chicago, Jan. 5, 1915.

Dear Doctor Stevens: Your communication of December 31, enclosing a copy of a letter received from Dr. E. W. Willetts, of Pittsburgh, likewise a copy of your reply to him, is at hand.

We have had more or less correspondence in regard to pathological laboratories advertising the fees they charge for tests and analyses, but the carrying of a general announcement of a laboratory has never been questioned.

Dr. Willetts has also written to *The Journal, A. M. A.*, and we are permitted to submit, herewith a copy of Dr. Simmons' reply. We are likewise enclosing copies of communications received from Dr. H. S. Warren, President of the National Pathological Laboratory; and from Dr. R. W. Webster, who is connected with the Chicago Laboratory. With these data you will be in a position to decide what procedure you care to take relative to carrying laboratory announcements in your journal.

While the Coöperative Medical Advertising Bureau solicits and secures for the publications which it represents only such business which it deems proper to be advertised in those publications, yet the Committee feels that each journal should have, and in fact has, a perfect right to reject any advertisement that it does not care to place before its readers.

Very truly yours,
(Signed) Will C. Braun.

Chicago, Jan. 4, 1915.

Dr. Ernest W. Willetts,
Pittsburgh, Pa.

Dear Doctor Willetts: Your letter of the 28th ult. was duly received and read with interest. It should have been answered before, but the crowding of the holiday season has made this impossible.

We have had several letters during the past year relative to these pathological laboratories, but each of them brought up the matter of advertising the prices; yours is the first we have received objecting to the plain proposition of advertising them. We had never thought there could be any question as to the advisability of such advertising in medical journals.

To make a dogmatic statement without any proof, there is probably not more than one practitioner in fifty who is able to do this work himself; some because they have not the necessary equipment; others because they are not competent; and still others because they do not care to take the time. Recent developments in medicine, however, have made it practically necessary for a man either to do this work himself or to have it done. The public even is beginning to demand it. What then shall these men do? In Chicago, in Pittsburgh, and in many other large cities men are conducting laboratories and are not advertising, do not need to do so; and it is not particularly in the interest of the practitioners of those cities that there should be any advertising done. But what about the men who are scattered over the country, who do not live in those large cities? What are they to do? How are they to know where the laboratories are? It seems to me that it is almost a necessity that there should be some way of letting the doctors know where they can send their specimens.

The question as to prices and the advertising of those prices has been given consideration and we have concluded, for the present at least, to allow the advertisers to mention these. Why? For the simple reason that, as a rule, the doctors are ignorant as to what the fee should be, and are therefore subject to exorbitant charges, especially when the price is not agreed on before the work is done. There surely can be no objection to fixed prices, because there is very little variability in the amount of work necessary for a given analysis, whether it be of urine, sputum, smears, or a Wassermann. The difficulty so far as private laboratories are concerned is that the man who has to make only an occasional Wassermann, for instance, is not able to do the work as cheaply as the regular laboratories, which are making half a dozen or a dozen a day. But is it not a fact that many benefit here, while one loses?

As a matter of fact, this question is a many-sided one, and it can not be settled by an *ipse dixit* of any one. The facts, as already stated, are that a very large portion of the members of our profession need some one to do the work for them; they want to be able to depend on the work; and they are anxious to get it done as cheaply as is consistent with good service. How will this general work develop? How is the doctor to have this work done? The best way would be to have it done as he has his prescriptions compounded; namely, by someone within easy reach. It would be ideal—and it may possibly, but not probably, develop some day—if, instead of having the prescription pharmacist as his right-hand man, he had a pathologist with a laboratory, who might also compound his prescriptions. I am not sure but that the best outcome would be to have the state itself take hold of this matter, as is being done to a certain extent in many states. The work being done by these states at the present time could be elaborated by having branches in the larger cities, especially in different localities.

Of course I have been discussing what might be called the pure routine work. I have in mind the laboratory man who simply conducts the examination and makes out his report to the doctor, leaving the latter to interpret the results of the work; in other words, to make the diagnosis. In those cases in which the laboratory man does the interpreting, he is entitled to the fee of the specialist. And it is in this connection that the man in the large city has the advantage, he can fall back on such expert laboratory workers.

There is, of course, very great danger that in this commercializing of laboratory work, for this is what it amounts to, men will be engaged to make the analyses who are not competent. There is need to-day of a method of standardizing these laboratories, and the standard must require competent, expert men. We have thoroughly investigated the laboratories whose advertisements we have accepted; we have turned down a large number, and we shall continue to refuse such advertisements unless we feel convinced that the laboratories are conducted, not only in an honorable way, but by men who are competent to do the work themselves or who employ competent persons.

Please do not understand from the above that we believe this whole question is settled. Far from it. I, personally, recognize the danger of these commercial laboratories; at the same time, I am aware of the absolute need, under present conditions, for such laboratories, do not forget the practical needs of the general practitioner, of those who want to do the best they can for their patients, but who do not happen to live within easy reach of the private laboratories of our large cities.

With all good wishes for the New Year, I am

Sincerely yours,

(Signed) George H. Simmons.

Chicago, Ill., Nov. 29, 1914.

Dr. George H. Simmons,
Chicago, Ill.

My dear Dr. Simmons: Your favor of recent date with enclosure of copy of letter from a "man connected with one of the leading laboratories," at hand. I am very glad indeed, that the subject of laboratory advertising and laboratory work in general has been brought to your attention as I feel that it is deserving of more than casual discussion.

In the first place, we must recognize the fact that the laboratory which is doing work for physicians, is to be regarded as more or less of a necessity in these days of specialization. For this reason, if for no other, such laboratories should be conducted on the highest ethical as well as scientific basis. There can be no question of the value of such a laboratory to the practitioner, but great care must be exercised to prevent careless and unsatisfactory work in these institutions. Unreliable and inaccurate work must not be allowed for a moment as the reports, coming from the laboratory, have an importance which is difficult to estimate. A bit of careless work may endanger the life of a patient by its failure to recognize abnormalities in the specimens examined. In this way a laboratory may become a greater menace, both to the profession and to the laity, than is the patent medicine evil. As you are aware, many physicians place implicit trust in a laboratory report as far as it may decide a diagnosis and many of them fail properly to correlate the clinical findings with those of the laboratory. A careless or inaccurate report becomes, therefore, almost a matter of criminal importance.

With the above ideas in mind, I come to the point of advertising the work and prices therefor. As the clinical laboratory comes in such close association with the physician, often forming an integral part of his important diagnostic work, it is rational to suppose that a physician will select for such work only those laboratories which he believes to be reliable and accurate. This question is not settled by mere reference to the price charged for the various examinations, but rather by the reputation of those doing the work in the various institutions. Of course there are many physicians that will send their work where they can get it done the cheapest but these are not to be considered as representing the better class of physicians. In a general way, then, the matter of price for any special examination becomes only a matter of incidental importance, as every laboratory does an enormous amount of so-called charity work for a fee which is far below that usually charged.

If, then, we grant that the prices for laboratory work are merely an incident to the selection of a laboratory by the physician, is there any reason for advertising the prices for the various examinations made by the laboratory? I would answer this by saying that there is. In these days of medical education and specialization, certain classes of laboratory work have become so thoroughly known to the practitioners that little of such work is sent to a laboratory, except in unusual cases. In other words, the physician does his own work in examining urine, sputum, smears, etc., unless he is so busy that he can not afford the time from his practice. For this reason, such examinations, as mentioned above, are made by all laboratories at a price which will enable the physician to have this work done without too great an outlay. On the other hand, the special examinations, such as the Wassermann and Abderhalden tests, which require special training both for their performance and interpretation, can not be done by the general practitioner. For this reason he is forced to send such work to laboratories which he regards as reliable in every way. It is just here that the trouble, which has been started in the Chicago Medical Society, began. Some of the laboratories in Chicago, especially the National Pathological and the Chicago Laboratory, have been advertising their prices for these special tests for some time. Others complained of this as being unethical on the grounds that these laboratories were setting an arbitrary price for this work and, further, that there should be no set price for such work. Now if there is one thing that should be fixed it is the price to be paid for laboratory work. This can hardly be done by any society or association, as any individual is entitled to charge whatever he thinks the work is worth. However, it is not fair to the profession or the laity to have a sliding scale to suit the case in hand. One price should prevail, at least in any one institution. There is no question of the possibility of "graft" by such a system. This is fostered, of course, by failure to advertise the prices for the examinations. The physician is entitled to know what is to be charged for the examination before he sends his patient or specimen and the patient is just as rightly entitled to know the price to be charged him. A laboratory that will be a party to "graft" by a physician, in the matter of over-charging for an examination is not worthy of consideration as a reliable institution and certainly not as an ethical one. It will be seen, therefore, that I believe that the prices for the various examinations should be published. Of course, the physician may write to the laboratory for its fee table, but this causes loss of time and delay in getting the report. If he knew beforehand he could send the specimen at once and know just how much his patient would be required to pay.

All of my previous remarks have left out of consideration the matter of business competition. This must be considered, of course, but the prices for laboratory work can not be decided on a purely competitive basis. At the present time, there is no fixed standard, but the general prices have become fairly well fixed both by agreement and by custom. Work done in some laboratories could not be considered reliable at any price, while in others a low price does not mean that the work is less reliable than in one in which a higher price is charged. In other words, it is not the price of an examination that determines its reliability. This is purely a matter of competency of the persons doing the work. Assuming that the workers in the various laboratories are equally competent, the price of an examination is a matter of personal privilege, just as the charge of various surgeons for similar operations.

This brings me to the chief point that I wish to make, namely that I believe it is time for the A. M. A. to standardize the laboratories of the country just as it has the medical schools. This would necessitate a large amount of work on the part of the investigating committee, but the results would justify the time and expense. Having standardized and classified, if necessary, the laboratories, the question of prices for the examinations to be made would be a more or less simple matter.

Trusting that this may explain my attitude regarding the points raised in the letter, which you enclosed to me, and assuring you of my appreciation of your courtesy in letting me have a copy of the letter, I am

Very truly yours,
(Signed) R. W. Webster.

Chicago, November 18, 1914.
Mr. William C. Braun, Advertising Manager,
Journal of the A. M. A., Chicago, Ill.

My dear Sir: We wish to say a few words to you on the subject that was brought up in the Council of the Chicago Medical Society last Tuesday in reference to laboratory prices being published in that Bulletin and other medical journals throughout the country.

Laboratories that advertise in medical journals are commercial concerns in the same sense that instrument houses are. These latter advertise in medical journals because physicians are their patrons, and for the same reason clinical laboratories advertise in medical journals. As commercial concerns, clinical laboratories are after the business, that is their object in advertising, and business is necessary to their existence. There is no greater impropriety in a laboratory's publishing to its public the price of a urinalysis than in the publishing of the price of a sphygmomanometer, a fever thermometer, a microscope or a textbook on infant feeding.

In another sense, the work of the laboratories brings them into a relation with the physicians which does not exist between supply houses and physicians. A perfectly ethical instrument house may and does sell nail files, douch pans, etc., to anyone who wishes to buy, but the ethical laboratory does not serve the laity in any manner, except upon the order and under the instruction of the physician. This answers the argument that patients can get work done at laboratories at lower cost than the doctors can do it for them. A lay person can not get service at any price at the sort of laboratories that are allowed to advertise in ethical medical journals. Since a knowledge of the prices, therefore, does not put it into the power of the laity to get work at that price from laboratories, it is no injustice, but rather a convenience, to the doctor to have prices for the commoner laboratory tests appear in advertisements.

The argument was advanced that laboratory prices should not be fixed, that it should be possible to raise them at discretion. However, no physician wishes to be the one to pay a larger fee for the same work than some other physician pays for it, and in justice, he should not.

As for the standardization of prices in the laboratory service, we feel justified in saying that although this is a special service, the tests are uniform and systematized as to the time and material that is required. One Wassermann test takes just as much time as another, therefore a definite price can be made. No unforseen factors can arise that will make it necessary to charge more for this test. Even the recognized hospital laboratories send out price lists with definite fees set for such tests.

Perhaps the strongest argument in favor of publishing laboratory fees is the fact that a general knowledge of such prices will do much to cause the discontinuance of laboratory "graft". Many physicians send their work to laboratories and charge their patients from fifty to one hundred per cent. more. To be sure, they sometimes call this addition charging for their personal service, for which they make no charge, but not always. The personal service of the physician, physical examination, taking the specimen, interpreting the result, etc., entitles him to commensurate fee, but it does not entitle him to collect his fee at the expense of the laboratory. Indeed, some physicians go so far as to ask the laboratory to collect double fees and return the excess to them. If the American Medical Association refuses to state prices, it will take away from physicians the source of information that is not conducive to the elevation of the medical standard. It will allow a scale of prices to be established and will put the stamp of approval on laboratory "graft."

The same arguments apply to publishing the price for service to the physician in the way of treatment conveniences. The service rendered is similar to that given in hospitals. The patient can not obtain treatment without his physician's attendance.

Many physicians apparently are under the impression that laboratory prices are as prohibitive as they were some years ago. A mere card, therefore, does not interest them. The advertising of reasonable prices for laboratory service, has brought these aids to diagnosis and treatment to the attention of physicians, to the no little benefit of the profession as a whole.

Business between laboratories is a question of competition. The laboratory which does good work will naturally get the most business, regardless of the prices charged, but if laboratory prices in general are prohibitive many physicians will refrain from having laboratory work done. Laboratories doing equally good work at more reasonable prices will command the greater amount of business, while a low price with poor work will be no advantage to the laboratory that offers such a combination.

In our opinion standardization of laboratory work should be made and prices given to the physicians through the medium of the medical journals throughout the country. Many physicians in the country, as well as the city, have no idea of the proper price charged by laboratories for tests and many of these doctors are of the opinion that laboratory prices are prohibitive and therefore do not use the laboratory for diagnosis and treatment in their practice. In our opinion there is nothing that can raise the standard of the medical profession more than to have adopted, by the practicing physician and surgeon throughout the country, the methods for diagnosis and treatment of disease as it is taught in the best medical schools, and as you know great stress is laid upon laboratory work among teachers in these schools. In fact these teachers themselves would not attempt to practice without the aid of laboratory work.

Thanking you for your attention and hoping that you will bring this before other officers of the American Medical Association, we are,

Very truly yours,
(Signed) National Pathological Laboratory.
H. S. Warren, President.

QUESTIONS IN VITAL STATISTICS ASKED IN EXAMINATIONS FOR ENTRANCE TO THE UNITED STATES PUBLIC HEALTH SERVICE.

Dear Sir: I am inclosing herewith a set of questions on demography to illustrate the kind of questions on the subject we purpose asking medical graduates who come up for examination for entrance to the corps.

Officers who enter the Public Health Service necessarily must master the essentials of vital statistics. The nature of their work demands this. But we feel also that the relationship of the practicing physician to the registration of births and deaths and to the reporting of the notifiable diseases is such that we may properly assume that a man who has been graduated in medicine and is ready to enter practice is familiar with the essentials of demography, at least to the extent comprehended by the inclosed questions.

Very truly yours.
Rupert Blue, Surgeon General.

1. What are vital statistics?
2. What is meant by demography?

POPULATION STATISTICS.

3. How is the population of a city or state ascertained?

4. For the purpose of vital statistics, how is the population of a city or state ascertained for years between censuses?

5. Discuss methods of estimating population for intercensal and postcensal periods.

6. Discuss the relationship between population statistics and birth, marriage, morbidity, and mortality statistics?

7. A city had 100,000 inhabitants at the time of the taking of the Twelfth Census (June 1, 1900), and 123,700 at the time of the taking of the Thirteenth Census (Apr. 15, 1910). Give the estimated population of that city as of July 1, 1915, on the basis of arithmetical increase.

8. In a city having a population of 57,600 April 15, 1900, and of 66,300 April 15, 1910, what will be the estimated population as of July 1, 1914, the estimate to be made on the basis of arithmetical increase?

9. In a city of which the enumerated population April 15, 1910, was 66,300, and in which the average annual rate of increase during the previous intercensal period figured on a geometrical basis of increase had been 3 per cent., what will be the estimated population as of April 15, 1915, figured on the geometrical basis of increase?

MARRIAGE REGISTRATION AND STATISTICS.

10. What purposes are served by the registration of marriages?
11. Describe a common method in use in the United States by which the registration of marriages is accomplished.
12. What are marriage rates?
13. How are marriage rates expressed; that is, in what terms are they usually stated?
14. What factors influence marriage rates?
15. In a city having a population of 53,420 inhabitants at the taking of the Twelfth Census (June 1, 1900), and of 72,643 at the taking of the Thirteenth Census, (April 15, 1910), there were during the calendar year 1913, 576 marriages recorded. What was the marriage rate for the year?

BIRTH RECORDS AND STATISTICS.

16. What purposes are served by the registration of births?
17. What is a birth certificate, by whom should it be made out, and with whom registered?
18. Describe a method in common use in the United States for the registration of births and the compilation of birth statistics for a state.
19. What are the essential data usually required in birth certificates?
20. What are birth rates?
21. How are birth rates expressed; that is, in what terms are they usually stated?

22. What factors influence birth rates?

23. What uses are made of birth records in public health administration?

24. Upon what does the accuracy of birth records and birth statistics depend?

25. The city of E had 125,632 inhabitants on January 1, 1913, and 130,368 inhabitants on December 31, 1913. During the month of June, 1913, there were 247 births and during the month of July, 1913, there were 223 births recorded. Give the birth rate for the city during the period June 1 to July 31, both days inclusive; also give the birth rates for June and July separately.

26. In a city which had a population of 44,360 April 15, 1900, and of 53,230 as enumerated April 15, 1910, and which, during the calendar year 1913, had 1376 registered births, what was the crude or general birth rate for the calendar year 1913? In estimating population use the arithmetical method.

MORBIDITY REPORTS AND STATISTICS.

27. What are morbidity reports?

28. How are morbidity reports obtained?

29. What are morbidity statistics?

30. How are morbidity statistics obtained?

31. Describe a method in common use in the United States for securing morbidity reports.

32. What purposes are served by morbidity reports? Of what use are they to a local health department? Of what use to a state health department? Of what use to the Federal health service?

33. Why is the reporting of cases of communicable diseases to the health department by practicing physicians necessary for the control of these diseases?

34. What factors influence the completeness with which morbidity reports are obtained in a community?

35. Upon what does the accuracy of morbidity reports depend?

36. What are morbidity rates?

37. What are crude morbidity rates?

38. What are specific morbidity rates?

39. How are morbidity rates expressed, that is, in what terms are they usually stated?

40. What are fatality, or case mortality rates, and how expressed, that is, in what terms are they usually stated?

41. The city of F had an estimated population of 324,000 on July 1, 1912. During the year 953 cases of typhoid fever were reported in the city and there were 51 death certificates registered in which typhoid fever was given as the cause of death. Give the typhoid morbidity rate, case mortality rate, and rate.

42. The population of the city of G was 11,400 at the time of the taking of the Twelfth Census, June 1, 1900. On April 15, 1910, the population was 14,560. During the year 1912, 75 cases of diphtheria occurred in the city. Of the 75 cases 6 terminated fatally. In making a report of the epidemic what would you report the morbidity rate of diphtheria to have been, what the diphtheria fatality (case mortality) rate to have been, and what the mortality rate?

DEATH REGISTRATION AND STATISTICS.

43. What purposes are served by the registration of deaths?

44. What is a death certificate, by whom is it made out, and with whom registered?

45. Describe a method in common use in the United States for the registration of deaths.

46. What are the principal data called for by the United States standard death certificate?

47. What is the registration area for deaths of the United States Census Bureau?

48. What are mortality statistics?

49. What are death rates?

50. How are death rates expressed, that is, in what terms are they usually stated?

51. What are crude death rates, specific death rates, standardized (sometimes called corrected) death rates?

52. What factors influence crude death rates?

53. What effect have variations in age distribution of population on crude death rates?

54. Upon what does the accuracy of death registration and mortality statistics depend?

55. What uses are made of the records of deaths and of mortality statistics in public health administration?

56. How is the data obtained from which the United States Census Bureau compiles the mortality statistics of the registration area for deaths?

57. To what extent do mortality statistics show the actual causes of death and upon what does their accuracy in this depend?

58. On July 1, 1914, the city of D had 51,200 population. During the calendar year 1914 there were 896 death certificates registered. How would the crude death rate for the year 1914 ordinarily be expressed?

59. In a city having a population of 44,360 on April 15, 1900, and of 53,230, as enumerated April 15, 1910, and which during the calendar year 1913 had 932 registered deaths, give the crude, general, or central death rate for the calendar year 1913.

60. In a city which had a population of 44,360 on April 15, 1900, and 53,230, as enumerated April 15, 1910, and which during the first six months of the calendar year 1913 had 530 registered deaths, express the death rate for this period in terms of an annual rate per 1000 population.

61. In a city which had a population of 44,360 on April 15, 1900, and 53,230, as enumerated April 15, 1910, there were during the month of April, 1913, 103 registered deaths. Give the April death rate expressed in terms of an annual rate per 1000 population.

INFANT MORTALITY AND LIFE TABLES.

62. What is meant by infant mortality?

63. What are infant mortality rates and how expressed?

64. What are life tables?

BUREAU OF MEDICAL EDUCATION AND LICENSURE.

BUREAU OF MEDICAL EDUCATION AND LICENSURE.
MEMBERS BY APPOINTMENT.
JOHN M. BALDY, Pres., 2219 DeLancey St., Philadelphia.
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SAMUEL G. DIXON, Harrisburg.

BUREAU OF MEDICAL EDUCATION AND LICENSURE.

To the Editor: I am enclosing you questions submitted at the last examination held for medical graduates in the state. The results of that examination are of interest. The total number examined were forty. The total number passed were thirty. The total number failed were ten, or thirty-three and one third per cent. When these results are analyzed we find that of the forty applicants twenty-five were graduates of schools outside of Pennsylvania. Fifteen were graduates of Pennsylvania schools. The ten failures were all from schools outside of Pennsylvania. There was not a single failure of the fifteen Pennsylvania men.

J. M. BALDY.

LIST OF QUESTIONS SUBMITTED BY THE BUREAU OF MEDICAL EDUCATION AND LICENSURE AT THE DECEMBER, 1914, EXAMINATIONS.

PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY.

1. Differentiate typhoid fever from acute appendicitis by means of laboratory tests.
2. Describe the evils that may follow the presence of adenoids in the posterior nares.
3. Name three most usual causes of the death of bone; describe the processes of the death of bone.
4. Describe the pathological changes in the liver in a case of chronic alcoholism; explain how the normal functions of the liver would be impaired in this condition.
5. State the different varieties of cells that may appear in the urine; discuss the significance of each variety, both as to the structure and functions of the kidney.
6. Name and describe the gross and the microscopical appearance of one of the more common varieties of carcinoma of the mammary gland; enumerate the avenues and usual points of metastasis.
7. Given a case of acute lobar pneumonia, describe the local lesion and the disturbed functions.
8. Contrast the blood picture in secondary anemia with that of normal blood.
9. Give in full your technic for differentiating simple urethritis from specific urethritis.
10. Describe your technic (by laboratory tests) for differentiating diphtheria from simple sore throat.

SYMPTOMATOLOGY, DIAGNOSIS, TOXICOLOGY AND MEDICAL JURISPRUDENCE.

1. Enumerate the symptoms of acute articular rheumatism and differentiate it from gonorrheal arthritis.
2. Enumerate the symptoms of cholecystitis. Name two diseases which may simulate it and differentiate each from cholecystitis.
3. State in detail the symptoms and physical signs of lobar pneumonia.
4. Differentiate a mitral regurgitation from an aortic stenosis.
5. Enumerate the symptoms of typhoid fever. Name a disease with which it may be confused and differentiate them.
6. Differentiate epilepsy from hysterical convulsions.
7. Differentiate uremia from apoplexy.
8. Enumerate the symptoms of diphtheria and differentiate it from follicular tonsillitis.
9. Enumerate the symptoms of a poisonous dose of corrosive sublimate.
10. State the exact cause of death by hanging and drowning. Describe the general appearance of a dead body from each of the above causes.

OBSTETRICS AND GYNECOLOGY AND PHYSIOLOGICAL CHEMISTRY.

1. Name three pathological conditions of the breasts associated with confinement, their causes, prevention, local and hygienic treatment.
2. What means would you adopt in order to relieve vomiting of pregnancy? On what theory would you use the remedies mentioned?
3. What symptoms would lead you to the apprehension of an oncoming attack of eclampsia before the convulsions set in? What is its treatment both before and after the convulsions?
4. If abortion occurs in the first three months of pregnancy what are the dangers and how are these dangers avoided. If they are not avoided how are they overcome?
5. What is the significance of excessive menstrual bleeding? What of intermenstrual bleeding and what of entire absence of bleeding?
6. Name the more usual bacteria which cause puerperal septicemia together with the methods of their introduction into the birth canal, the results of their presence there and the prevention of these results.
7. Name four abdominal enlargements which might be mistaken for pregnancy (after the seventh month) and differentiate them from pregnancy.
8. Differentiate between human and cow's milk as to percentage of water, proteid matter, sugar, fat and ash.
9. How may bile be detected in the feces and in the urine?
10. Indicate the steps in the digestion and absorption of the food substances present in beef-hash.

SURGERY AND ANATOMY.

1. Name the anatomical parts most usually involved in a brain abscess secondary to middle-ear disease. State the early symptoms of such a cerebral abscess; without details describe a surgical operation for its relief.
2. If a palmar abscess be not incised, state at what points pus is most likely to appear near the skin; give an anatomical explanation of same. Briefly describe the treatment of palmar abscess.
3. Name the parts of the body at which cancer most frequently appears. State what are the first danger signals of the existence of cancer in these parts.
4. Under what circumstances and conditions does intracapsular fracture of the hip most frequently occur? Outline two methods of treatment with the reasons for selecting each. What is the usual deformity in this fracture? How is this deformity produced?
5. Enumerate conditions caused by gonorrhea that may require surgical intervention. Describe an operation for any one condition selected.
6. Outline the treatment of the unconscious state from (a) electric shock, (b) drowning, (c) syncope.
7. State the classification of burns. State the sources of danger from severe burns. How may these dangers be lessened? How may they be treated if they occur?
8. What symptoms are produced by loose cartilage in the knee joints? Describe in detail an operation for the correction of this condition.
9. What are the general symptoms common to fractures of the vertebræ? What special symptoms would be found in fracture of the lower dorsal (involving the cord)? Without details outline treatment.
10. In falls on the feet or twists or slips what lesions are to be reckoned with? Outline the treatment of any lesion selected.

PRACTICE, MATERIA MEDICA, THERAPEUTICS AND HYGIENE.

1. Give the treatment for a case of average severity of iritis caused by syphilis.
2. Outline (a) the prevention, (b) the management of lead poisoning.
3. Outline the treatment both general and medicinal of a case of acute myocarditis.
4. Describe the method of continuous enteroclysis. What therapeutic results would you hope to produce by this measure?
5. What hygienic precautions would tend to min-

imize the liability towards acute diseases such as tonsillitis, rheumatism and pneumonia.

6. Describe the method of ascertaining blood pressure. What means and measures other than drugs would you employ in the treatment of a pressure of 200 mm. in chronic nephritis.

7. In the treatment of articular rheumatism what dietetic and hygienic suggestions would you make? Name three drugs that might be employed in the treatment of this condition with the precise reason for the employment of each.

8. State the sanitary precautions to be observed in the treatment of measles. What are its possible dangers? Give the indications for the use of three remedies that might be employed in its treatment.

9. Describe the action of croton oil both internal and external. Give the dose and state what special indications this drug meets.

10. Outline the management of a case of poison ivy. State important conditions to be met, with definite reasons for meeting these conditions. Give reasons for the use of each remedy selected.

SOCIETIES.

PHILADELPHIA POLYCLINIC OPHTHALMIC SOCIETY.

Meeting of November 5, 1914.

Dr. Wendell Reber exhibited a case which when he first saw it presented some of the characteristics of trachoma and vernal conjunctivitis. Both lids were filled with granules but in closer inspection there were a great many flattened pavement-like granules resembling what the dermatologists call plaques. There was some itching of the eyes but not a great deal. The suggestion of milky-white iridescence in the conjunctiva was unmistakable. The condition had existed for nine years without the slightest involvement of either cornea, the patient being nineteen years of age. The granules were almost cartilaginous in texture and a very fine false membrane could be detached from among them at almost any time, so that it was easy to pull out a stringy or elastic secretion that by certain authorities is held to be characteristic. The patient had practically no scratchy sensation from the large pavement granules. Mitigated copper stick with copper citrate ointment at night as a therapeutic test aggravated the condition. A two-grain-to-the-ounce solution of copper sulphate has proved more efficacious than any other application in this case.

Dr. Reber presented the case particularly for purposes of differential diagnosis between vernal conjunctivitis which he thought this case illustrated and trachoma which was the subject for discussion at the meeting.

Trachoma in Pennsylvania. Dr. Clarence P. Franklin (by invitation) said that the status of trachoma under the law in Pennsylvania made it a reportable disease but that difficulties in diagnosis caused much laxity in reporting trachoma as a contagious disease. There are many cases existing in the state unreported. The law makes no provision for care or segregation after the disease is reported.

He spoke of the scope of work of the Health Department looking to eye examinations to find trachoma and the subsequent care of the disease; he gave a sketch of the system in use in England at present, which consists of school-homes to continue the education of children who have trachoma, while under public care and treatment.

There has been a plan advocated by the Commission on the Conservation of Vision for an initial school-home-hospital located near Pittsburgh, as the center of greatest density of trachoma is among the foreign born coal and iron mining population. This plan is in temporary abeyance, awaiting the result of a conference among all those interested, both sociologically and medically, looking toward the introduction into the next legislature of a bill requiring all hospitals receiving state aid to open their doors to cases of trachoma, gonorrhea, syphilis and tuberculosis.

Differential Diagnosis of Trachoma. Dr. William Zentmayer: In the first stage of the disease it might be mistaken for follicular conjunctivitis. In the second stage the affections with which it might be confounded are vernal conjunctivitis, Parinaud's conjunctivitis and tuberculosis of the conjunctiva. In the third stage there is a resemblance to pemphigus of the conjunctiva and to the shrinking of the conjunctiva following burns.

According to Axenfeld the finding of Prowazek-Halberstaedter inclusion bodies in a case of follicular affection of the conjunctiva would strengthen the diagnosis of true trachoma but their absence would not exclude trachoma.

Treatment of Trachoma. Dr. Luther C. Peter feels that our state laws are inadequate to meet our needs in the prophylactic treatment of trachoma. The following-up treatment should be rigidly enforced after the patients leave the hospital, and ambulant cases should be instructed as to the dangers of infecting those about them, also as to necessity for using their own washing utensils, linens, etc.

The first indication of trachoma, the infection, is best treated by simple, non-irritating collyria, such as boric acid wash and normal saline, rather than strong antiseptic solutions such as bichlorid of mercury. Nitrate of silver should be applied to the lids daily by the surgeon to relieve the inflammatory symptoms, supplemented at home by ten to twenty per cent. argyrol solution. No operations are indicated in this stage other than canthotomy to relieve the blepharospasm and pressure.

The second or beginning cicatricial stage is best treated by copper crystals applied to the everted lids once in forty-eight hours. This may be supplemented by home use of citrate of copper ointment, increased from five to fifteen per cent. Surgical interference hastens recovery at this stage, the pricking of each follicle by a sharp bistoury, or Beers' knife, followed by a careful expression of the follicles with a suitable roller forceps under general anesthesia, accomplishes a maximum result with a minimum amount of damage to the tissues. After operation the copper treatment should be again resumed. Dr. Peter has found the use of glycerite of tannin followed by the dusting of an iodin-bearing powder, such as aristol, valuable in the final stages of the disease. They are also applicable in the acute stages when acute inflammation has disappeared and the patient shows signs of recovery.

The third or cicatricial stage is largely the treatment of sequelæ of the disease and is therefore largely surgical.

Treatment of pannus in a majority of instances, when the pannus is of mild degree, is that of the general treatment of trachoma. It usually disappears with disappearance of other symptoms. Severe forms may require more heroic treatment, such as peritomy, and, when the corneal tissue becomes the site of ulceration, treatment suitable to the condition should be employed.

Four points should be emphasized in the treatment of trachoma: (1) The use of mild collyria, rather than strong mercurial washes. (2) The employment of such surgical operations, when indicated, as will bring about a maximum result with a minimum damage to the tissues. (3) Most careful refraction of trachomatous patients after recovery. (4) A following-up system should be practiced so as to insure complete cure.

Dr. William Campbell Posey, discussing: I have seen two or three cases similar to that shown by Dr. Reber and even a little more marked and where the follicles were harder. There was no question of the uselessness of rolling in the cases referred to, the only thing to do was to pare them down with a very sharp follicle knife. Until they were pared down they irritated the cornea.

The differential diagnosis of trachoma is simple enough. In vernal conjunctivitis the cornea is usually clear while the conjunctiva is characterized by a milky-white haze. Dr. May has thought that cases like this one of Dr. Reber's and the ones I referred to presented a mixed type but I think they are cases of vernal conjunctivitis which have persisted for some years. The granules are so hard that the cold weather does not affect them.

Within the last week I had a young man sent to me with inflamed eyelids. On first looking at the lids I thought it was trachoma. The young man had adenoids, and evidences of inflammation of the lymphatic system. The inflammation in the eye was phlyctenulosis. Although the inflammation had persisted for a number of years the cornea was clear and the granules were in ridges. The man was under twenty years of age. Adenoids were taken out, the lids were rolled and treatment was about the same as that outlined by Dr. Peter.

If possible children with trachoma should be sent to a trachoma school but we can not do that with adults. It is a very difficult sociological problem. Say a man has a large family, what are we going to do with him, for after three or four weeks of hospital care he must be discharged. His family must be cared for. To my mind the thing to do would be to have the social worker go to his house and show him how to live, and also go to his place of business and explain to his fellow workers the danger this man may be to them. There must be better housing conditions for men afflicted in this way. The best plan would be to send these men and their families to a detention hospital and let the man go out and work while the families were cared for, but that of course is an expensive plan. The best thing is to open the wards of some hospital to this class of cases. The development of the social service system will see these cases taken care of.

WALTER W. WATSON, Secretary.

COUNTY SOCIETY REPORTS.

ALLEGHENY DECEMBER.

The Allegheny County Society met Tuesday evening, December 15, in the Assembly Room, President Hawkins in the Chair.

Dr. George E. Pfahler of Philadelphia addressed the society on "Deep Roentgen Therapy." In remarks preliminary to the screen illustrations, Dr. Pfahler spoke of the value of deep roentgen therapy in uterine fibroids. Out of forty-four patients in such cases so treated, none died, none developed malignant disease, and of the four unsuccessful cases of this group, in one, the fibroid was reduced to the size of an orange and subsequently successfully operated upon; in another, a woman of thirty-two years, treatment was stopped, but the patient is in good condition to-day, having had no hemorrhages; the third patient was operated upon; and the fourth, a colored girl, after having acquired gonorrhea and become pregnant, returned for treatment. Where malignancy can be diagnosed early operation should be performed. In uterine sarcomata, Miller, from the Frieburg clinic reported that seventy-nine per cent. of cases operated upon were failures; in cases treated by the roentgen rays but eight tenths of one per cent. were failures. The technic of deep roentgen therapy has been vastly improved. Enormous doses can be given in a comparatively short time. All soft rays can be cut out by filters, allowing only rays needed for the deep tissues. Deep-seated disease can be attacked from many different points and the division of an area into various fields is very advantageous.

Dr. Pfahler then gave a large number of photographic illustrations of cases, demonstrating the progressive curative effects of deep roentgen treatment in many cases. The penetrating effect of the rays was especially well shown in one case where a growth on one side of the head commenced to disintegrate although the rays were directed upon the growth upon the opposite side only.

Dr. Lewis Gregory Cole of New York addressed the society on "The Physiology and Diagnosis of Lesions of the Cap by Serial Roentgenology with Cinematographic Demonstration of the Gastric Motor Phenomena." In an animated and enthusiastic manner, Dr. Cole reproduced upon the screen numerous radiographs demonstrating the gastric cap, normal or deformed, and its absence. He objects to the term "duodenal cap," maintaining that histologically and physiologically that portion of the alimentary tract resembles the stomach closer than it does the duodenum; therefore, it should be called the gastric cap, or simply, "the cap." A well-shaped cap, which, if the pylorus were excluded from the picture, would appear as if a part of the stomach, its outlines a continuation of the gastric outlines, even if found but once in a large series of radiographs, as seldom as once in twenty plates, excludes ulcer, contends Dr. Cole, who also claims that only in one case, of which he is not sure, could he ever find the so-called duodenal ulcer except in the cap. In support of the accuracy of this method of diagnosis out of 121 cases, 113 were proven by surgery correctly diagnosed in every essential detail. A negative diagnosis was made in forty per cent. of cases, in which operation had been decided upon.

Dr. Cole then demonstrated cinematographically the gastric cycle, comprising systole and diastole, which he likened to the cardiac cycle of systole and diastole; also, the propulsion of the gastric contents along the stomach into the gastric cap, and, finally, its descent into the descending duodenum. This demonstration was exceedingly clever and entertaining, as well as instructive. Abnormal as well as normal motility was delineated.

In discussion, Dr. G. C. Johnston paid a high tribute to Dr. Pfahler as a pioneer in deep roentgen work, and to his perseverence in the face of bitter and hostile criticism and the incredulity of the profession at large. I thoroughly agree with Dr. Pfahler's statements regarding the curability of sarcomata by roentgen therapy. Dr. Cole has maintained that a normal cap can be shown in every normal duodenum, even if only one cap can be secured from twenty plates. Dr. George of Boston has confirmed and proved this. The secret of Dr. Cole's great success lies in his infinite capacity for hard work, for taking pains, and in his great imaginative faculty. Dr. Johnston closed his remarks by giving in detail in the characteristic, Johnstonesque style an extremely interesting and diverting account of Dr. Cole's assiduity, enthusiasm, and his mechanical contrivances, in particular, the elaboration of a film suitable for his cinematographic work.

H. P. ASHE, Reporter.

BERKS—DECEMBER.

The Berks County Society met in the Medical Building, December 8. The retiring president, Dr. John Kaufman, gave an address upon "Fraternity." Fraternity: (1) The state, condition or relation of brotherhood; (2) a body of persons associated or held to be associated together by common interests and characteristics; (3) an organized body or society.

First, brotherhood, I am sure you all know its meaning but how many of us apply that feeling, affection and coöperation in our society or in our daily duties. I am quite sure that if each one knew that his fellow practitioner would sustain him in his actions that the burdens of the practice of medicine would be much lighter. For example, if one of you had a very trying case on hand, and were doing all you could and all any one else could but the patient became dissatisfied and discharged you, would you not feel much easier if you knew that the doctor to follow you would give you credit for your efforts and uphold you in the treatment and talk to the patient in your favor instead of making some cutting or unkind remark, such as, "Well, if I had seen the patient earlier I could have cured him," or "if he would have had the proper treatment he would not have been so sick"? Such acts are not ethical; they are not professional; they are not fraternal, and they do not benefit much, for often have I seen that same fellow lose the confidence of a family just because he tried to depreciate the valuable service of the man that preceded him. Now is the time for us to help to bear each other's burdens and by so doing help ourselves.

The adage "United we stand, divided we fall," is just as appropriate to the medical profession as to any other and unless the different units of the medical profession will get together and practice fraternity they will be divided and fall. I venture to say that twenty-five per cent. of our medical men do not know how much good can be found in the other seventy-five per cent., and never find it out because they do not associate with them. If you do not know a doctor well, get acquainted with him. By association, a better fraternal spirit prevails, and men will find it a pleasure to help each other and both will benefit by it.

As a society we can become better by instilling into it a little more fraternal spirit; we can adhere more closely to the ethics of the A. M. A. and, by a united effort, attain the title to the building in which we meet and through this give a better service to the public.

"Foot and Mouth Disease as Found in Human Beings" was presented by Dr. James Tyson of Philadelphia who described foot and mouth disease as an acute infectious disease of lower animals, especially of cattle, sheep and swine, more rarely the goat and horse, and still more rarely of fowls, dogs and cats. It is characterized by fever, and the presence of vesicles and ulcers in the mucous membrane of the mouth, in the furrows and clefts about the feet, and on the teeth of animals. It is communicable to man, especially to children, and the symptoms are about the same.

The disease has an incubation period of from three to five days. At this time there is fever with malaise and loss of appetite. Vesicles containing a yellowish serum are seen on the hard palate and pharynx. There is a sensation of heat and burning throughout the mouth, and the swelling may be so great as to make speech difficult and swallowing painful. There is copious salivation; almost simultaneously appear vesicles between the fingers and toes and around the nails. Vesicles have been noted on the nipples of women and so scattered over the entire body that the picture resembled smallpox. Gastrointestinal symptoms are sometimes present, especially in children.

The anxiety that is felt at present in regard to the effect of the disease on the human health is somewhat exaggerated. The most common means of spreading the infection is by infected milk, and there is comparatively little danger of this. Milk from infected farms is not permitted to be shipped at all, the only danger is, therefore, that before the disease has manifested itself, some infected milk might reach the market. For this reason pasteurization is recommended. But pasteurization is recommended for nearly all milk, sold in the city of Reading or any other city for that matter, in order to safeguard against tuberculosis, typhoid fever and gastroenteritis of infants.

The virus dies after ten minutes exposure at 70° C., and by heating at 100° C. for an instant, or by pasteurization for twenty minutes at 145° F. The virus may occur even in butter, buttermilk and cheese, for the virus is not killed by the treatment which milk undergoes in their manufacture.

In our country, the foot and mouth disease has been so rare that there are few recorded cases of its transmission to human beings. In 1902 a few cases were reported in New England and in 1898, in a few instances, eruptions were found in the mouths of children, which were believed to have been caused by contaminated milk.

As early as 1834, three German veterinary surgeons made a study of this disease and drank a quart of milk from cows affected with foot and mouth disease. On the second day, one of them had fever, headache, and itching of the hands and fingers. A few days later a vesicular eruption formed on the mucous membrane of the tongue, cheeks, and lips and on the skin of the hands and fingers. There were a considerable number of cases of milkmaids who contracted the disease by milking the infected cows.

In 1890 a case was reported from Berlin where a man had contracted the disease by eating butter made from milk from infected cows.

Brussenius and Siegel have collected a large number of cases mentioned in the literature of foot and mouth disease in man. During the years from 1878 to 1886 there occurred sixteen different epidemics. During one epidemic thirty-six died, during another epidemic twenty-three died, and during another sixteen died. In Germany from 1886 to 1896 the German Imperial Health Office reported 172 cases in man, sixty-six of which were traced to infection from milk, while one case occurred from the use of butter made from milk.

Conclusions reached are that the disease is a rarity in this country; that the course is mild and the mortality rate is low; that a great number of cases in foreign countries are so mild, that the family physician is not called in; that children are more susceptible, and that the complicating gastroenteritis is the bad feature; that it is transmissible from man to man; that the milkers and caretakers of the cows frequently contract the disease; that it is transmissible by milk and milk products from infected cows; that it lasts about ten days; that pasteurization eliminates all danger; that the treatment consists of antiseptic mouth washes and astringents.

Clara Shetter-Keiser, Reporter.

BUCKS—November.

The annual meeting of the Bucks County Society was held at Doylestown, November 11, with thirty-six physicians present. President LeCompte presided and the regular secretary kept the records. The annual election resulted as follows: President, Dr. William S. Erdman; vice presidents, Dr. Samuel A. Leinbach and Dr. Henry Linn Bassett; secretary-treasurer and reporter, Dr. Anthony F. Myers; board of censors, Drs. George M. Grim, William R. Cooper and Howard Pursell.

In his address as retiring president Dr. LeCompte uttered some splendid thoughts and finally urged that a still greater effort be made to make the society useful to the members.

The society received a gift of fifty dollars from several friends of the society for the maintenance of the standard of the *Monthly*, the organ of the society.

Dr. Ernest Laplace, Philadelphia, addressed the society on "Intestinal Stasis in Its Relation to Gastric and Duodenal Ulcers." He spoke along the line of how retained putrid fluids soon become virulent and produce deadly issues, toxins of some definite type or pathologic genesis. Intestinal stasis is an old element in the causation of diseases and, unfortunately, too frequently overlooked. It is only recently that the subject received the serious attention it deserves as a causative element. He described the imperfect drainage of the colon and how the continued stasis in turn allowed the bacterial flora of the colon to increase in virulence, this constant absorption being responsible for many ills. Clinical and experimental evidence lends weight to the hypothesis that intestinal stasis offers at least a plausible explanation of the predisposing cause of gastric and duodenal ulcers.

Anthony F. Myers, Reporter.

CLEARFIELD—November.

The annual meeting of the Clearfield County Medical Society was held in the parlor of the Dimeling, November 11, at 6:45 p.m., with President Woodside presiding and twenty-five members present. Dr. T. Tobin of Tyrone and Dr. Cavanagh of Pittsburgh were present as guests. After the reading and adoption of the minutes of the previous meeting and the presentation of bills due from the society, which were ordered paid, a report from the committee on resolutions on the death of Dr. F. B. Read was read, adopted and ordered spread on the minutes, published in the *Bulletin* and a copy sent to the family of the deceased.

A communication from the Pennsylvania Society for the Protection of Scientific Research was read and after some discussion a motion prevailed that the society indorse the work of this society and Dr. L. F. Stewart was appointed as a director of the society. Letters were read from Dr. F. G. Bennett and State Secretary Stevens. A verbal report was rendered by the Committee on Revision of Constitution and By-Laws and submitted to the society for adoption at the next meeting, after which a motion prevailed that it be laid on the table for consideration and adoption at the December meeting. A resolution to conform to the ruling of the Post Office Department which was passed at the September meeting was changed to meet the requirements of the department so that the *Bulletin* may be accepted finally as second class matter. The business being thus disposed of the meeting adjourned and all repaired to the dining room where the banquet committee had performed the duties of their office in such a creditable manner that many were heard to say that this was one of the most enjoyable annual meetings we have had for years. One of the enjoyable features was the singing and recitation by "Reddy" Stauffer whose characterization of the "Farmer" was very much enjoyed by all. Another notable feature of the evening was that fourteen members paid their dues to January, 1916, and received their receipts which make them in good standing in the state society and insures them all its benefits.

J. M. Quigley, Reporter.

COLUMBIA—December.

At the meeting of the Columbia County Society at Bloomsburg, December 10, at which there were twenty-one members present, officers for 1915 were elected as follows: President, Dr. W. C. Hensyl; vice presidents, Drs. T. C. Harter and Ambrose Shuman; secretary-treasurer, Dr. L. B. Kline; censors, Drs. J. E. Shuman, J. T. Macdonald and J. R. Montgomery.

The retiring president, Dr. Joseph Cohen, delivered a most excellent and practical address on "Malpractice Suits."

Luther B. Kline, Reporter.

DAUPHIN—December.

The Dauphin County Society met December 1, with President Culp in the Chair.

A very interesting paper on "The Diagnosis and Treatment of Rheumatism" was presented by Dr. J. W. Middleton of Steelton. The paper has been epitomized as follows: The word rheumatism should be obsolete, it being now meaningless. The common use of the word by the laity sometimes misleads the practitioner in his diagnosis. Acute articular rheumatism is an infectious disease. The bacillus is probably a diplococcus. Laboratory methods as yet are of little help to the practitioner in his diagnosis of this disease. Monarticular arthritis should never be diagnosed rheumatism. Dr. Richard C. Cabot's tables of the relative frequency of the causes of pain in the limbs was shown on the blackboard. Some of the diseases from which acute articular rheumatism must be differentiated are gonorrheal, scarlatinal and syphilitic arthritis, gout, rheumatoid arthritis, tubercular joint or bone disease, bursitis, flat foot, varicose veins, tenosynovitis, osteomyelitis and other neoplasms, sprains, multiple and alcoholic neuritis, tabes and traumatisms of the joints. In the treatment absolute rest must be insisted upon. The salicylates in the various forms are almost specific in true rheumatism. They must be adapted to the varying susceptibilities of the patients. Specific and autogenous vaccines have not as yet proved of any great value in the treatment of true rheumatism. They have proved more serviceable in other forms of arthritis.

The discussion was well entered into by the members. H. Hershey Farnsler, Reporter.

DELAWARE—November.

Upon invitation of Dr. Harry Gallagher, the November meeting of the Delaware County Society was held at his residence in Glenolden. It was moved and seconded that the society make any or all necessary changes in its constitution or by-laws or both so as to be in unison with the constitution and by-laws of the state society.

Dr. Richard C. Norris of Philadelphia, addressed the members on the subject of "Twilight Slumber as Contrasted with Pituitrin and Ether Methods." As early as 1902, morphin and scopolamin were used to produce what was then called "painless childbirth." It was noted that labor was prolonged, there were more lacerations, and babies were asphyxiated. The method was abandoned. Twilight sleep aims not to relieve the pain and suffering attendant upon childbirth, but to cause the patient to forget the occasion entirely, a condition of amnesia in contradistinction to anesthesia.

In some types of highly neurotic, nervous primiparæ the twilight sleep is just the thing, if carefully carried out in detail. When the labor pains have reached the stage of one every five minutes, the patient is given 1/2 gr. narcofin and 1/150 gr. scopolamin hypodermatically. At the end of forty-five minutes, the dose of 1/150 gr. scopolamin is repeated. Further doses depend on the memory of the patient. One half hour later she is questioned for certain memory tests. Twice again at intervals of 1/2 hour she is questioned the same way. If not yet amnesic, a third dose of 1/150 gr. scopolamin is given. The patient is now isolated in a darkened room and sleep is induced. The nurse or doctor carefully watches the patient's pulse, fetal heart sounds, etc. At the moment of birth, cotton is placed in the ears, towel over eyes, and ether is given; the patient will probably feel pain and utter cries, but in a half to one hour she will have become conscious and unaware that her child has been born.

Thus no fear of a second labor bothers her and her nervous system has been spared much shock. Thus in twelve to eighteen hours, some five or seven injections of 1/150 gr. scopolamin are given. In other types of cases than those mentioned, we often encounter asphyxiation of infants and postpartum hemorrhage from relaxation of the uterine muscle tissue. Pituitrin acts by raising the blood pressure, stimulates the uterus and unstriped muscle tissue, and stimulates respiration. Blood pressure is raised from 20 to 40 c.c. when 1 c.c. is injected and a higher rise is noted when injected intravenously, shock being an indicated condition for such use. Diuresis is produced by raising the blood pressure and by its action on the kidney musculature. On the fetus a slowing of the heart, cyanosis and even the passage of meconium are noted as the result of absorbed pituitrin. It was first used in 1909 by Bell. Dangers of its use are that in a few minutes sharp uterine contractions occur which may result in rupture of the uterus. Lacerations on the cervix, and the birth canal also occur. If the child is a hydrocephalic, rupture of the uterus may occur as will also occur with a monster or twins with locking heads. Various tumors of the birth canal should also be included. The author advises the combined use of pituitrin and ergotin as the use of pituitrin alone may cause post partum hemorrhage and atony of the uterus and a condition of general collapse. This combination gives an ideal result. In the production of abortion, pituitrin seems to be useless. It has no power to produce this effect. To use it safely, give it seldom to primiparæ. Also be sure of the presentation.

The "Midday Jag," as facetiously named by Dr. Norris, if carefully planned and executed is much more simple in technic, is safer for all concerned and after effects are almost nil. For example, given a case of say a multipara, give two ounces of castor oil on retiring. She may have a few sharp pains during the night or in the morning. Dilate the cervix carefully, then give one half dose of pituitrin. Again dilate carefully, and one hour later give a full dose of the drug. Follow this with ether and everything is over in an hour or an hour and a half. The caution is to use the pituitrin with ergotin always.

In discussion the following points were brought out: In an incomplete abortion with dilatation of the cervix, pituitrin will bring about the desired result of completely emptying the uterus. It is better to give the ergotin when the child is born. In some very few cases, especially of primiparæ, no action of the drug is to be noted whatever. However the preparations are becoming more effective as they are being standardized. Deep muscle injections are to be preferred. If injected into the circulation direct, as *e. g.*, into a vein, toxic action of the drug is apt to follow. The author considers it contraindicated in a case which has been previously delivered *via* Cesarean section: the force of the resultant contractions might cause rupture of the uterus. Also that chloroform is likely to cause hepatic toxemia the same as occurs in the toxemia of pregnancy. Ether is the safer.

At the conclusion of the paper, members present greatly enjoyed the dinner which had been prepared. Dr. M. A. Neufeld delighted the company with several piano solos.

W. E. EGBERT, Reporter.

ELK—JANUARY.

The annual meeting of the Elk County Society was held at Ridgway, January 14. After dinner the business meeting was held with eleven members present. Secretary's report showed that there were nine meetings with a quorum and seven papers read during the year; one annual picnic, and two meetings without a quorum. There were twenty-nine members at the beginning of 1914; Dr. C. C. Neff removed to York County and tendered his resignation which was accepted; one removed to another county; one suspended himself; one new member; present membership twenty-seven, of which seventeen have paid their dues for 1915. Treasurer's report showed that we have money in the bank for the first time in years. The Committee on Constitution and By-Laws, reported on the model constitution, and with few changes to meet local conditions it was adopted. The auditing committee reported the accounts correct. The society voted to purchase Dr. Cabot's case reports for use as supplementary to regular program. There are real progressives in Elk County, and a slate committee was dispensed with, the society nominating the officers for the year 1915, which were unanimously elected.

Dr. Shaw being confined to the house with a touch of grip, the addresses by the presidents, retiring and elect, were dispensed with. Dr. Mitchell of Warren was introduced and gave an interesting and instructive lecture on "Alcoholic Psychoses," condemning in no uncertain terms the practice, by some at least, of using even small amounts of liquor in delirium tremens, warning us especially to be on our guard with the one who recognizes his surroundings and attendants but at the same time hears voices accusing him of all sorts of crimes and offenses. The great majority of these cases sooner or later develop suicidal or homicidal traits. We would not attempt to abstract Dr. Mitchell's paper from memory, but it was worth listening to. We are starting in this year with every indication of having a banner year, and we are going to be on hand in Philadelphia in September to vote for the Murray resolution. S. G. LOGAN, Reporter.

ERIE—JANUARY.

The meeting of the Erie County Society was held January 5, in the parlors of the Reed House. After the routine business a recess was taken and a buffet supper and smoker were enjoyed by all present. The meeting again being called to order, Dr. G. William Schlindwein delivered his address as retiring president. He gave a résumé of the work accomplishd during the past year with numerous suggestions for the betterment of the society in the future. Dr. Schlindwein pointed out the fact that the Erie County Society is in better condition than at any previous time in its history; the average attendance is greatly increased, the papers read are more generally discussed by the members, and financially the society has a respectable savings account.

The officers were elected for 1915.

C. H. MCCALLUM, Reporter.

JEFFERSON—NOVEMBER.

The Jefferson County Society met at Frank's tavern, Reynoldsville, November 27, at 2 P.M., with President Sayers presiding and thirteen members present.

Dr. S. M. Free read a paper on "Safety First as Applied to the Medical Profession." He presented statistics showing that 35,000 persons were killed annually in this country by accident and 2,000,000 were injured. The Interstate Commerce Commission states that ninety-two per cent. of these accidents are avoidable. One of the surprising statements he made and proved was that forty-three per cent. of the accidents at railroad crossings were at unprotected ones, while the rest are at protected crossings. He assigned as reasons for so many accidents the low value placed upon human life, alcoholism, the speed craze, trespassing on railroads, etc. He recommended that education on "safety first" be given in schools, and urged that all physicians become enthused over this important matter, and do their utmost in encouraging the "safety first" movement, whenever and wherever possible.

A committee composed of Drs. Brown, Murray and Raine was appointed to prepare resolutions on the death of Dr. Frank N. Yeager. Drs. Free, Jordan and Schumacher were appointed as a program committee for the ensuing year and Drs. Murray, Pringle, and Mills were appointed as a committee to revise the constitution to conform with the model constitution recommended by the state society. The report of the Pittsburgh Session of the state society was given by Dr. John H. Murray. The action of the state society in eliminating the presidents (or secretaries) of county societies from a seat in the House of Delegates was condemned.

J. FRANK RAINE, Reporter.

LANCASTER—DECEMBER.

The Lancaster City and County Society met in Malta Temple, December 2, at 3 P.M.

Dr. F. J. Kalteyer read a paper on "The Diagnosis of Gastric and Duodenal Ulcers," and it made the meeting a most interesting and profitable one. The principal points brought out were as follows: The cardinal symptoms of gastric ulcer are pain, vomiting and the vomiting of blood. The pain usually comes within two hours after the taking of food. The time is dependent on the location of the ulcer. The pain is caused by the excess of acidity which comes after the acid present in the stomach has been neutralized by the protein material of the food. The pain was explained by Dr. J. McKenzie's theory. It is supposed to travel from the stomach by way of the sympathetics to irritable cells in the spinal cord from which it is referred to the skin by efferent nerve fibers. There is also a referred pain or tenderness a little to the left of the eleventh spine. The vomiting is present in a large proportion of cases and as there is usually hyperchlorhydria the vomiting is of acid material. Very often it gives some relief. The vomiting of blood means ulceration and makes the diagnosis much more certain. It is present in about thirty-three per cent. of cases seen. Laboratory tests do not help very much. The tongue is coated and the appetite fairly good in distinction from cancer where the appetite is poor. The taking of food gives some relief since it causes the excess of free HCl to unite or to be diluted. The closure of the pylorus also helps to give some relief.

In duodenal ulcer we also have pain, vomiting and vomiting of blood but the pain here is the cardinal symptom. Vomiting and vomiting of blood only occasionally or less commonly than in gastric ulcer. In these cases the pain is two hours or more after taking food when the stomach is empty and the patient hungry. It may occur only once a day instead of after each meal or may come on in the middle of the night. The pain is referred to the epigastrium and not to the middle of the back. There is usually a history of recurrence of the symptoms and of long-standing dyspepsia.

Vomiting is less common than in gastric ulcer and the time that vomiting occurs may help us to differentiate between gastric and duodenal ulcer.

Gastric and duodenal ulcers must be differentiated from gallstones, genitourinary disease, chronic appendicitis, floating kidney and the gastric crises of locomotor ataxia.

A very interesting discussion followed the paper which was participated in by Drs. Alleman, Appel, Hershey, Lehman and Miller. A vote of thanks was extended to Dr. Kalteyer.

A report of the Committee on the Revision of the Constitution and By-Laws was presented. It contained a model constitution following approximately the one published in the Journal.

A motion of Dr. Roebuck that a copy of the proposed constitution be mailed to each member before the next meeting was carried and the printing of the proof copies was turned over to the publication committee.

Henry B. Davis, Reporter.

LEBANON—November, December.

The meeting of the Lebanon County Society was held at the Good Samaritan Hospital, November 10 at 2:45 p.m. After a brief business session the members adjourned to the wards where Dr. Paul W. Clough, associate in medicine at the Johns Hopkins Medical School, Baltimore, held a bedside clinic. Cases of typhoid fever and emphysema were discussed and many new and old theories were impressed by having the patients at hand. Dr. Clough holds that a liberal, yet safe, diet in typhoid fever is better than the rigidly small one, and recommends the computation of calories in deciding the food.

At the meeting of December 10 held in the courthouse, Lebanon, with President Walter presiding, Drs. A. S. Reiter read a paper on "Bronchitis." He divided his subject into acute and chronic, and laid emphasis on the fact that, while several of the symptoms are the same in both classes, important and striking differences may be drawn between the two. Some of the most helpful symptoms are cough, pain, dyspnea, some fever and increased sputum. Dr. Reiter emphasized the fact that the patient, in describing the pain, will lay his open hand on the chest, while in pleurisy he will use a finger or two, and in pleurodynia he will hold his side. The speaker believes that with some practice one can make a diagnosis by the characteristic cough. The cough ought to be relieved with all possible dispatch and this is done by altering the character of the secretion from that of tenacity to that of liquidity.

In the discussion which followed the fact was brought out that acute bronchitis causes more patients than any other complaint at this season of the year. Drugs suggested were aconite, belladonna, bryonia, creosote, squills, and senega.

George R. Pretz, Reporter.

MIFFLIN—December.

The regular meeting of the Mifflin County Society was held in the parlors of the Crystal Café, Lewistown, December 3, with eleven members present. Dr. G. T. Gracey of New York was present as a guest. Officers were elected for the ensuing year.

Following the reports of the various committees, Dr. F. A. Rupp read a paper on "Acute Acidosis in Children." The paper was of exceptional interest, being a delineation of a relatively uncommon and somewhat mysterious affection of childhood. It is characterized by periodical attacks of vomiting which occur at regular or irregular intervals of weeks or months without any apparent cause. Dr. Rupp said in part: "Cyclic vomiting is a medical entity not a symptom, not acute indigestion but an acid intoxication of children with acetone, diacetic and butyric acid. These acids are the products of faulty fat metabolism, probably the result of liver inadequacy. The attack is usually preceded by languor, dullness, loss of appetite, and a general sense of discomfort. The vomiting begins suddenly and is attended with great retching and distress. It occurs as often as every half hour sometimes for two days and is associated with a prostration so severe as to apparently threaten life. Fever may or may not present, the pulse is rapid and weak and thirst is intense. After two or three days the disease abruptly ends and convalescence is rapid." The doctor then described four cases which had come under his observation. The treatment of this condition after vomiting has begun is unsatisfactory, nothing seems to have the slightest influence in controlling it. As all food and drink and medicine increase the vomiting all should be withheld. Water should be given every four to six hours by the rectum to keep up the patient's urinary secretion and allay thirst. Sodium bicarbonate in relatively large doses between the attacks is considered by Dr. Rupp to be the best preventive treatment of this disease.

Following Dr. Rupp's paper Dr. W. H. Parcels delivered an address on "Reminiscences." He told of experiences in his long practice; of nocturnal trips through storms and darkness; of operations performed by the light of a smoky lantern or tallow dip, and many incidents, ludicrous and pathetic, which were thoroughly enjoyed by those present.

R. T. Barnett, Reporter.

MONTGOMERY—November.

The meeting of the Montgomery County Society was held at Charity Hospital, Norristown, November 4.

Dr. E. T. Quinn read a paper on "Headache as a Symptom of Disease." He divided the causes of headache into mechanical, chemical and reflex. Under the mechanical factors a common cause is tumors and hydrocephalus; under the chemical, anemia and toxemia. Tumors increase the pressure by increasing the bulk of the cranial contents; abscesses also behave in the same way.

Hypertension headaches appear in the nape of the neck. In these cases of continuous headache, the eyes should be frequently examined and changes in the fundus noticed. Pressure points may be often demonstrated over the distribution of the occipital and the trigeminal nerves. In vagus disturbance with headache we find hiccough and vomiting and abnormal pulse. In optic and acoustic disturbance, we may perceive spots before the eyes or buzzing in the ears with vertigo. In indurative headaches there are pains in the neck and back caused by induration of the bodies of the muscles due to chronic myositis. The indurations are painful on pressure and feel like grains of shot.

We group certain headaches under the term of "nervous" because we find nerve sedatives prove useful, but even in these cases there is undoubtedly some intracranial pressure.

Many cases of headache may be cured by blood letting at the mastoid. Gouty and rheumatic headaches are promptly relieved by the proper treatment.

Dr. Anthony Myers of Bucks County was a welcome visitor and gave the society a little talk on "Brotherly Love."

At the meeting of November 18, Dr. J. P. Crozer Griffith read a paper on "Infant Feeding." Experience has taught us that there is no other food known equal to that of good breast milk. The breast fed baby has five times the chance of living as the bottle fed baby. In artificial feeding we must remember we are always dealing with an unnatural food and no amount of modification can possibly act like mother's milk. When feeding artificially we should observe briefly the following points: (1) That bacteria certainly are harmful, and the milk used must be as free as possible from them. (2) Moderate heat should be applied to artificial food, but overheating causes curds. (3) We must be sure of the exact composition and food value of the food employed, in order that accurate changes may be made at times. The food value of the mixture is often figured in calories; this is the German method. The Americans use the percentage method. The difference in the two methods is after all only a matter of thought.

Dr. Griffith then took up the different ingredients of milk and carefully went over the symptoms of too much, or too little of each of the different ingredients.

Edgar Stanley Buyers, Reporter.

NORTHAMPTON—October, November.

At the October meeting of the Northampton County Society Dr. Charles E. deM. Sajous of Philadelphia addressed the society on "Glandular Therapy." Particular attention was paid to obesity due to causes relating to the ductless glands, such as occur in hypothyroidism, hyperthyroidism, hyperadrenal states, castration, ovariotomy, pituitary disease, etc. This rather intricate subject was handled so skillfully that every practitioner could follow the discussion, finding it very interesting as well as instructive.

At the November meeting Dr. Henry K. Gaskill of Philadelphia was present and spoke on "The Treatment of the Commonest Skin Diseases of Children." Among the diseases considered were eczema rubrum, impetigo contagiosa, pediculosis, scabies, psoriasis, rhus toxico-dendron, and naevi cavernosus. The lecture was exceedingly practical. He demonstrated the use of carbon dioxid snow in treatment of naevi. This meeting was one of the most profitable and enjoyable of the year.

W. D. Chase, Reporter.

PHILADELPHIA—November.

The Philadelphia County Society met November 25, at 8:30 p.m., President Robinson in the Chair. The program consisted of a symposium on the Prevention of Deformities.

"School Life and the Onset of Deformities" was presented by Dr. Walter S. Cornell, director, Division of Medical Inspection of Public Schools. An article appearing in a recent issue of *The Weekly Roster* called attention to the importance of orthopedic defects from a standpoint not usually considered by the physician. The broad viewpoint outlined we would do well as physicians to consider: "Deformity is to be seen everywhere. Its presence is deplorable as it tells in very loud words of the physical and emotional suffering of the afflicted and the terrible handicap they are doomed to carry through life. It is indeed to be deplored that the persons so afflicted in very large proportion could have been, but were not, treated in early life so as to have been cured or very greatly improved. The distress and resentment of many entering adult life, when they contemplate what might have been done for them, is not pleasant to consider."

Deformities considered in connection with school life are almost entirely those of the spine, comprising principally stoop shoulders and lateral curvature. We need only to mention the intimate relation of a contracted chest to tuberculosis, general malnutrition and the prevalence of lateral curvature to appreciate the major relative importance of these two physical defects to the entire remaining field of orthopedics. It is the consideration of physical defects in their association with others that forms the most basic principle of medicine in the study of growing children. Stoop shoulders and flat chest are in this paper considered as one condition. The causes of stoop shoulders are many. Workers in tuberculosis hospitals first noted the close association of pulmonary tuberculosis with the condition and provided nose and throat dispensaries that fresh air might be obtained by these patients through their noses as well as through house windows. The causal relation of low nerve tone and malnutrition, of defective eyesight and hearing and of low nervomuscular tone has also been recognized. Most cases of lateral curvature are primary in causation and due to fatigue of the back muscles from over-long school periods.

Our school curriculum should be amended to provide frequent periods of bodily freedom and relief. It will be remembered that "Ben Hur" asked to row alternately on the starboard and port sides of the galley upon noticing the one-sided development of his fellow galley slaves. The routine medical inspection of children will prevent a certain proportion of the stoop shoulders and scoliosis by the correction of myopia and astigmatism, removal of nasal obstruction and treatment of catarrhal deafness. The great attack must be made from the standpoint of personal hygiene, the standpoint of direct corrective exercises. The system of corrective exercises just introduced into the Philadelphia schools is under the direction of the Department of Physical Education which coöperates with the Department of School Medical Inspection. Special exercises are given these children in the schools and to be performed at home. I would make an earnest plea for the greater emphasis by orthopedists upon the common defects rather than upon new operations for serious and crippling deformities; a plea to the medical profession for the recognition of the symptom complexes in developing children; a plea for the medical care of patients upon the basis of hygienic living with the courage to charge for advice which prevents disease; a plea for the better understanding of the intimate relationship of defects of the teeth to defects of the nose and throat, and, finally, a plea for the recognition by medical colleges of the necessity of instruction to students upon the diseases and defects of children of school age.

"Tuberculosis in Relation to Deformities and Their Prevention" was presented by Dr. Henry Ling Taylor, New York City: Tuberculosis of the bones and joints is one of the commonest causes of crippling deformities which are a grave personal handicap and a serious economic loss to the community. In order to prevent the annual increase in the number of incapables from this source, we must first direct our preventive measures against the dissemination of tuberculosis (1) by official inspection of herds and milk products, with the view of stamping out bovine tuberculosis and preventing the distribution of contaminated dairy products; (2) by segregation of the distribution of human tubercle bacilli and the disinfection of their sputa; and (3) by the invigoration of children and youths and adults through a more hygienic life.

When a tuberculous joint is present we must make an early and accurate diagnosis and institute effectual treatment as early as possible, continuing it until the disease is quiescent. During this time the joint must be fixed in its most useful position so that when the disease is arrested the limb may still be serviceable even if joint motion is diminished or absent. Severe terminal deformities of the limbs may be corrected nearly always by safe and comparatively simple surgical operations and should be so corrected much oftener than they are. Without having exact figures I do not think joint tuberculosis is quite as common in New York, and probably in other large towns in this region as formerly. We do not see so many severely deformed people on the streets.

Whatever difference of opinion there may be about the bovine infection of tuberculosis there is no difference in opinion of the practical results of having children in close companionship with advanced consumptives. Time and time again I have found cases in the clinic in which the child was sleeping in an unventilated room with the father in an advanced stage of tuberculosis and three and four cases of tuberculosis infection in the same family. These were not inherited cases for we have seen the same thing in those of the same household but not related. In one case we found that the nurse of a baby was tuberculous. Failure in early and accurate diagnosis of deformity in bone and joint tuberculosis is as common as it is disastrous. Probably one half of the fixed deformities are due to mistaken diagnosis or no diagnosis at all. The early diagnosis is not always easy even for specialists. The term "rheumatism" is one which is rapidly passing out of use in scientific language. "Rheumatism" means infection and the source should be ascertained. There should be willingness to examine thoroughly cases which seem to be trivial.

The patient should be built up by general hygiene as in pulmonary tuberculosis, and probably a systematic application of sunlight to the naked skin, according to an exact and simple technic, is the most important advance in the last ten years in the treatment of surgical tuberculosis. In our fresh air home on Long Island we have just finished our eighth year and the average gain in children kept out in the open air has been seven pounds per summer per child for seven years. In the last year we have used the direct sunlight treatment, putting the children in the sunlight for six hours a day without a stitch on them and the results have justified the belief that this treatment is probably the most important advance in the treatment of joint tuberculosis in the last ten years. In the local treatment of tuberculous joints, with fixation properly applied, you will have little need of traction. The limitation of activity is extremely important. If the simple principle is observed of fixing the joint in the most useful posture more than half of the bad deformities will be prevented. We operate freely in adults and sparingly in children.

"The Status of the General Practitioner in the

Prevention and Correction of Deformities" was presented by Dr. H. Augustus Wilson: Your committee has deemed it desirable to consider the status of the general practitioner in the prevention and correction of deformity. The orthopedic surgeon, being often the court of last resort in cases of progressive bodily deformity, is in a position to review all of the past history of the patient. One constantly hears that the family physician has given assurance that the child would outgrow its bowlegs; that the early pain of tuberculous bone disease was growing pains; that nontuberculous processes were rheumatism; that normal feet of children required arch supporters.

The general practitioner in the country differs widely from the general practitioner in the city. The former is compelled, and the latter elects, to prescribe for all conditions. In city life there appear to be three types of the general practitioner: (1) The self-contained physician who elects to be the medical autocrat; (2) the distributor to specialists; (3) the coöperator. The self-contained autocrat attempts to emulate the country doctor without the necessity of so doing. The increasing specialization has become a necessity, because of the disasters often caused by the self-contained autocrat. The distributing general practitioner is usually a skillful diagnostician with insufficient confidence in his own knowledge of therapeutic measures. He selects a specialist to whom the patient is sent with instructions to remain under his care for the specific lesion. It is difficult to determine the divided condition of the patient affected with three or more so-called special diseases. as seen in the case of a young girl of sixteen who within a period of four months was elaborately studied by ten different specialists. The coöperating general practitioner is the highest type of all, for he combines the best and avoids the worst features of the others. It has been my experience that the best ultimate results have been obtained when I remained in coöperation with the general practitioner.

In the great majority of conditions ultimately becoming orthopedic problems the onset and early progress are so inconspicuous that in the beginning they defy accurate diagnosis. It would seem that the general practitioner has the largest opportunity to determine the relative importance of the various etiological factors in scoliosis in school children. In the early history of bone tuberculosis there is a period of uncertainty when the symptoms are attributed to other causes. The referred pains are casually classed as "rheumatism," a word which should be stricken from our vocabulary. The etiological importance of the eruptive fevers in the producing of joint affections; of typhoid fever in posttyphoid dislocations; of often remote gonorrhea in subsequent arthritis; of various factors in numerous forms of backache; and of pyorrhea in a vast variety of non-tuberculous joint affections, as well as the expedience of employing passive motion in treatment is a problem worthy of close attention.

The general practitioner has a most difficult task when he encounters congenital deformities. Whether he knows it or not, he is confronted with Wolf's law that all prolonged alteration of the function of any part of the body, either congenital or acquired, is surely followed by anatomical changes. He must analyze carefully the many conflicting statements regarding the advisability of immediate correction or of postponement. After all the various problem students have made their reports, it is often the province of the family physician to decide for the family, upon the actual diagnosis and to direct the treatment. The various laboratory aids to diagnosis, when combined with an analysis of clinical findings, often materially assist in diagnosis. With the essential clinical phenomena as a basis, doubt can often be changed to certainty by the employment of radiography, blood tests, urinary analyses, and bacteriological research; but, I know of nothing more confusing than a radiogram, unless it be the report of a radiographer who attempts to make a diagnosis without accurate clinical data. I believe there is entirely too much hastily conceived and misapplied treatment. The essential ingredient of any therapeutic measure should be skillful diagnosis. This is accomplished only by devoting time and discernment to a skillful weighing of all obtainable facts.

Dr. R. Tait McKenzie, in discussing: To the various factors bearing upon deformities I would add the design of clothing, and the construction of furniture. I shall confine my remarks, however, to the subject of postural deformities that are nontubercular. As soon as we assume the upright position the pressure of the whole body weight coming upon the feet gives a tendency to their eversion, thus threatening deformity of the arch. The next point at which the bony structure may yield is at the knee, and from the slightly bowed leg there may be the condition of knock-knee. With an exaggeration of the curve which may occur at the lower part of the back there is a compensating curve in the upper part of the back. The ribs are carried downward, the chest is flattened and the abdomen protrudes giving the typical condition of bad posture with the consequent disarrangement of the contents of the upper zone of the abdomen and the long train of symptoms familiar to all.

Many faulty positions are acquired in the school room where the child has to sit still for long periods of time. City conditions are also at fault for the child has not the opportunity for play which gives the best development. This, however, is being corrected by the establishment of playgrounds. Occupation is another factor in etiology. In many occupations we are unable properly to use our muscular system. It is not surprising that we find motormen and hospital nurses flat-footed. The underlying principle in all these deformities is fatigue in some form. Much can be done in the school room by breaking up the long periods of study into short periods of rest and exercise and by tests in posture. It has been found that one of the chief causes of the stooping of children has been in the structure of the clothing by which a constant pressure is felt on the back of the neck. This is remedied by changing the cut of the garment.

Dr. James K. Young: Three sources of infection in tubercular children are (1) cows milk; (2) nurses and attendants; (3) infected rooms. The faucial tonsils seem to be the chief channels of infection. My clinical observation leads me to believe that suppuration does not so frequently occur in these instances of bovine infection as in the human. The importance of the source of infection being that of nurses and attendants has so impressed Mr. Thomas A. Edison that he has personally supervised a photo-play entitled the "Temple of Moloch," which has for its climax the discovery of the infection of two children by a tubercular nursemaid. The photo-play is to be used by the Tuberculosis Commission in its warfare against the white plague.

The occupations which seem to be most suitable are not always the best adapted to or selected by the deformed person. Music, especially orchestral, wireless telegraphy and the telephone have afforded valuable means of livelihood. School teaching is a suitable occupation for those in whom the tubercular process has been arrested.

Dr. Cornell, closing: I have learned much tonight and shall urge upon our school authorities the importance of vocational training of crippled children and of the provision of ample sunlight in our school buildings. The psychology of crippling deformity is an aspect of the problem totally different from that of the mechanical treatment and claims our best endeavor. I would specially plead for treatment by the medical profession of crippling deformities from the preventive standpoint.

Dr. Taylor, closing: The other papers have brought out much of importance and of practical suggestion. It is gratifying to know of the advance in postural work outlined by Dr. McKenzie. The subject of occupations for cripples I am especially interested in. I would not be misunderstood regarding the value of the x-ray. What I said was that in the early cases the *x*-ray frequently showed nothing. I do not wish to be understood as believing that you can not get good results by traction, but, as I have said, if you will handle your case with fixation, properly applied, you will have little need of traction, and a little motion is worse than a stiff joint.

SOMERSET—NOVEMBER.

The Somerset County Society met in the Council Chamber at Meyersdale on November 17, with about one third of the members present. This was the last meeting for the year 1914, and all officers, committees and the representative to the House of Delegates reported. The latter report was somewhat in the nature of a criticism of the House, for reducing the representation of the smaller county societies. This meeting was the silver anniversary of the organization of the society in 1889. In the secretary's report he said that there were twenty-three original members, eight of whom have gone to their reward, six have been dropped from the roll, two have removed from the county, one has retired from practice and is now an honorary member, and six remain as active members.

Officers elected for the ensuing year are: President, Dr. G. A. Noon; vice president, Dr. R. T. Pollard; treasurer, Dr. W. S. Mountain; secretary, Dr. H. C. McKinley, who was also made the reporter. The treasurer and the secretary have held their respective offices since the organization twenty-five years ago.

The society was the guest of the local fraternity, at the Colonial Hotel for dinner, thus combining as much as possible the social feature with the business session.

On reconvening at 1:30 P.M., Dr. Berkheimer read a paper on "Appendicitis." After giving the anatomy, physiology, pathology, etiology, symptoms, and diagnosis, he recited three cases which illustrate the difficulty of correct diagnosis in some cases.

Case 1. A young man of twenty-five years, single, a teamster, past history negative; present illness began November 4, with acute pain in bladder radiating to perineum and head of the penis, frequent painful micturition, no pain or tenderness in region of appendix, temperature 97, pulse 110, bowels normal. Patient catherized and examination for calculi negative. November 5, condition unchanged except some abdominal distention: patient was taken to hospital and examined by four physicians who were unable to diagnose the case; operation was deferred to November 7, when a perforated appendix was found. With the exception of induration about the opening, the organ was not much diseased. A grape seed and several other small substances were found in the abdominal cavity. Patient died forty-eight hours later from general peritonitis. In this case there was not one of the cardinal symptoms present.

Case 2. Married woman, aged forty-four. Father died of acute indigestion, otherwise family history negative. Patient had had frequent attacks of indigestion and had been treated by many stomach specialists without relief. On one occasion I found slight tenderness at McBurney's point which disappeared in two days. Six months ago I advised operation and the patient was taken to the Germantown Hospital at Philadelphia where *x*-ray pictures were taken, and after several consultations she was operated upon. A large indurated appendix was found bound down by numerous adhesions; patient made a good recovery and is now well.

Case 3. Married woman aged thirty-five, family history negative. Patient began to menstruate at fourteen and normal; has two living children, aged seven and nine years. Had a miscarriage three years ago and since then has had pain in right iliac region, most severe during menstrual period. No history of stomach trouble but bowels usually constipated; constant tenderness in right ovarian region. Did not respond to treatment and operation was advised. She was taken to a Baltimore hospital and operated on for ovarian disease; instead, the appendix was found diseased, about seven inches long and adherent to right ovary. Patient made a good recovery.

These cases illustrate a few of the difficulties we may encounter in the diagnosis of appendicitis. The mortality given by different authors varies from twelve to twenty per cent. owing to the type of case presented. In the hands of good surgeons the percentage is now much lower. Dr. Osler says there is no medical treatment for appendicitis. The uncertainty in the diagnosis has no doubt given impetus to use of the knife. If the diagnosis is made early and immediate operation is done not many fatalities would result.

The next meeting will be held at Rockwood in January when the new officers will be installed. The wisdom of bimonthly instead of trimonthly meetings has already been demonstrated.

H. C. McKinley, Reporter.

WESTMORELAND—December.

Westmoreland County Society convened at one o'clock on the first day of the last month of the year, in City Hall, Greensburg, with an attendance of but several short of fifty, the banner attendance of the year.

Routine business was expeditiously disposed of and the society voted after discussion to sustain and as far as possible aid the efforts of the Latrobe Academy of Medicine in endeavoring to have enacted state legislation providing for the supply, without cost, of diphtheritic antitoxin in all cases by the state.

Consideration was next given to adoption of the model constitution. Discussion disclosed an appreciation of the results of the efforts of the committee preparing the model which is a definite improvement on the previous code. With but the insertion of minor changes which would in no manner affect the relationship of the state and the county organizations the newly provided constitution was adopted to become effective the first of the coming year.

The exceptions noted above consisted in (*a*) the retention of the first Tuesday of each month as date of first meeting, since that date has become such a well established institution in the annals of the society; (*b*) the retention of nomination of officers as under the old constitution, the so-called "open meeting method"; (*c*) a combining of the offices of secretary and treasurer, the secretary-treasurer's official capacity covering the duties of both offices; (*d*) increase of salary of secretary-treasurer (amount of increase and present stipend withheld under fear of provoking a general walk out of the members of Secretaries Union of Penna., No. 23).

Election of officers for 1915 engrossed the attention of the society as clearing off regular business for the day. Tabulation at end of election resulted in selection of the following officers: President, Dr. W. J. Walker; vice presidents, Drs. R. E. McCormick and D. A. Walker; secretary-treasurer, Dr. M. W. Horner; reporter, Dr. U. H. Reidt; censor, Dr. C. W. McKee.

Dr. Thomas St. Clair of Latrobe, in the opening paper of the afternoon, clarified the murkiness of uncertainty by a cleverly interesting paper on "Eczema, Its Diagnosis from Kindred Affections of Like Manifestations." The paper was wholly too excellent to be read at that particular time and under the then existing circumstances. The contention is that it should have been followed at the same session by a paper covering treatment. Could a paper have been prepared and presented in as comprehensive a form as was that on diagnosis, then the combined effort must have been greatly enhanced and discussion could have been more general. Eczema is without doubt to all, a question of such great moment in active practice that the afternoon's entire scientific time might well have been given over to its more complete consideration.

In the rather too limited discussion of the paper etiology and treatment had a partial inning. Assertion was made that many resistant and intractable cases of eczema were either akin to rheumatism or were hereditarily the result of rheumatic parentage, these cases frequently being improved by salicylates internally and eternal applications of the same probably fortified with carbolic acid.

Dr. O. I. Hess of Scottdale read the second and concluding paper of the afternoon on the "Emunctories." The paper was evidently not completed at one writing as was quite evident to auditors. Theme 1 ran smoothly and like a song—a song of the Fall of the year when the crops were gathered and the grain was to be threshed and threshing was by means of a flail, which after all was a typically fit method of introducing eliminative apparatus, for did not that spell perspiration? Dr. Hess ran down and up the line,—skin, kidney, lungs and bowel. Not a cloud in the sky, everything plain sailing and never deviating from the expressed and implied ethics of the A. M. A. But here the emunctories were practically turned inside out and cast aside. Theme 2, dominant and aggressively strong, assailed mankind's proneness to eat, or fill, or gorge; church suppers, lawn fetes, lodge suppers, formal dinners *ad infinitum* were left without a traditional leg to stand on, or more correctly speaking, without a stomach to lie in. It sounded like a bad conscience borne by a body that could not assimilate buckwheat cakes and sausage as it could when the flail was aiding elimination.

Discussion of the paper revealed that every third doctor in the room carried on his person a 110-degree dyspeptic grouch and felt it his mission to, so far as possible, ruin the appetite of the man who had a decent minded department of interior. Temerity was backed clear off the map and finally indiscretion was succeeded by rashness when an "undiagnosed" case of what Lane calls stasis, declared that if he had absolute control of the food from babyhood he saw no reason why an age of one hundred to one hundred and fifty should not be reached. The assertion went unchallenged that gluttony was more inimical to the individual and the nation than was the consumption of liquor. The presumption is that this latter statement passed the censors without a struggle by reason of the fact that Doctor Hess in his paper failed utterly to even attempt hanging a true bill on free lunch. D. A. WALKER, Acting Reporter.

YORK—DECEMBER.

The York County Society met December 3, at 1 P.M., Dr. J. N. Dunnick presiding and forty-three members present. The report of the Committee on Health and Public Instruction, relative to a communication from the Pennsylvania Society for the Protection of Scientific Research, was unanimously adopted. Dr. J. H. Comroe was appointed a director; the Executive Committee was given discretionary power to arrange for a public meeting in the interest of scientific research, and the sum of ten dollars was contributed by the society.

Dr. A. A. Long read a most exhaustive and exceedingly practical paper on "Medical Economics," and Dr. J. H. Comroe read a paper on "The Relationship of the Consultant to the Practitioner." These papers will appear later in the JOURNAL.

The secretary-reporter was instructed to consult an attorney for a written opinion as to the legality of certain considerations relative to the adoption of the new Constitution and By-Laws, including the legality of the provision pertaining to "lodge practice," as applied to members in good standing under the old by-laws of the society.

Drs. A. A. Long, E. S. Mann, Charles Rea, I. Gable and E. W. Meisenhelder, Sr., were elected as a nominating committee, according to the provisions of the new by-laws.

The following program for 1915 was unanimously adopted.

Jan. 7: Business Meeting and Banquet.
Feb. 4: Medical Clinic, Dr. David Riesman, Philadelphia.
March 4: Metabolism, Dr. A. E. Taylor, Philadelphia.
April 1: Use and Abuse of Obstetrical Forceps, Dr. J. W. Williams, Baltimore.
May 6: Gout, Dr. J. F. Small; Acidosis, Dr. C. H. May.
June 3: Children's Clinic, Dr. J. P. C. Griffith, Philadelphia.
July 1: Intestinal Obstruction, Dr. R. Jessop; Intestinal Stasis, Dr. J. N. Dunnick.
Aug. 5: Management of Prostatic Enlargement, Dr. G. E. Spotz; Cystitis in Infancy, Dr. L. M. Hartman.
Sept. 2: Industrial Diseases, Dr. G. E. Holtzapple; Etiology as a Diagnostic Factor, Dr. L. S. Weaver.
Oct. 14: Diagnostic Significance of Abdominal Pain, Dr. J. B. Deaver, Philadelphia.
Nov. 4: Treatment of Diseases of the Stomach from the Standpoint of a General Practitioner, Dr. J. Friedenwald, Baltimore.
Dec. 2: Relationship of Physicians to Each Other, Dr. C. W. Eisenhower; Hospital and Dispensary Abuse, Dr. J. C. Atkins.

JULIUS H. COMROE, Reporter.

NECROLOGY.

IN MEMORIAM SHARON P. HEILMAN, M.D.

(The following resolutions were adopted at the meeting of the Armstrong County Society, September 8, 1914.)

Dr. Sharon P. Heilman, son of J. M. and Esther Eliza Heilman of Kittanning, was born March, 1874, and died at Phoenix, Arizona, May 14, 1914.

Dr. Heilman was graduated from the Princeton College in 1896 and the medical department of the University of Pennsylvania in 1900. He began the practice of medicine in Kittanning, where he continued to practice until failing health caused him to take up his residence in the southwest.

With the demise of Dr. Heilman there comes to its earthly close a useful life in the midday of manhood. Knowing as only one with his keen diagnostic sense that the nature of his malady would soon remove him from the scenes he loved and the hearts he served, he gathered strength from such a source rather than be appalled by the stern decree.

Dr. Heilman was an active member of the Armstrong County Medical Society, having been honored at one time as its president and censor. He always was present at the meetings and his active interest in the society proceedings rendered him a most valuable member in its clinical and business affairs.

Whereas, In the death of Dr. Sharon P. Heilman the Armstrong County Medical Society loses one of the most valued members, one who by his integrity. unselfishness, devotion to duty, loyalty to his patients and to his friends, and who by his courteous and genial nature became an inspiration to us all, therefore be it

Resolved, That we hereby express our appreciation of his courtesy, faithfulness, and efficiency as a physician, citizen and friend, and

Resolved, That we tender to his wife, mother, and brother our sincere sympathy in their bereavement, and

Resolved, That these resolutions be recorded in the minutes of the Armstrong County Medical Society.

D. I. GIARTH.
F. W. HEILMAN.
E. J. LAWSON.

IN MEMORIAM JOSEPH W. HILLIER, M.D.

(The following resolutions were adopted by the Mercer County Medical Society, November 13, 1914.)

Whereas, In the death of Dr. Joseph W. Hillier of West Middlesex, the medical fraternity loses its oldest continuous practitioner, who practiced fifty-three years in Mercer County and who was a pioneer member and always a faithful worker of the Mercer County Medical Society, and

Whereas, His kindly nature, geniality, courteous manner, high moral character and self-confidence were an inspiration to us all; therefore be it

Resolved, That we hereby express our appreciation of his faithfulness and efficiency as a physician, of the honorable and professional manner in which he always performed the duties of his high calling, and that we record our appreciation of his character as a man, a citizen and a dear friend, and be it

Resolved, That we tender to his wife our sincerest sympathy in her bereavement, and be it further

Resolved, That these resolutions be spread upon the minutes of our society; that a copy be sent to the bereaved wife; that a copy be sent for publication to each of the papers of Sharon and to the PENNSYLVANIA MEDICAL JOURNAL.

GEORGE W. KENNEDY,
J. H. REED,
C. C. MARSHALL, Committee.

IN MEMORIAM—H. X. BONBRAKE, M.D.

Doctor H. X. Bonbrake was born in Washington Township, Franklin County, March 31, 1843, son of Daniel and Margaret (Stoner) Bonbrake.

He was educated at Mercersburg College and as a young man began the study of medicine with Dr. J. J. Oellig, completing his studies with Dr. James Brotherton, of the same place, and was graduated later from Bellevue Hospital Medical College, New York City, in 1865. He began the practice of medicine at Leitersburg, Maryland, but after a brief time there, he returned to Franklin County and practiced at Mont Alto for many years.

In 1868 he was appointed superintendent at the Mont Alto Iron Company's forge, and served as manager there until 1889, doing both the chemical work for the mining company and the medical work for the employees. In 1889 he moved to Chambersburg where he quickly acquired a large practice. He served as county coroner in Franklin County from 1890 to 1894; was on the staff of physicians of the Chambersburg Hospital where he lectured on surgery to the nurses. Dr. Bonbrake for many years had been county medical inspector, originally for the State Board of Health and for the last nine and a half years under the State Department of Health, and physician in charge of the tuberculosis dispensary at Chambersburg.

Professionally, he was a member of the county and state societies and the American Medical Association, and took an active part in the proceedings of these bodies. Fraternally, he was a member of the George Washington Lodge, No. 143, F. and A. M.; also Chapter No. 176. He was also a member of the B. P. O. E. His church affiliations were with the Zion Reformed Church of Chambersburg.

In 1863 he married Agnes Foulke, daughter of George S. and Josephine (Wolf) Foulke, Westminster, Md. His widow and the following children survive: George F. S. Bonbrake, Painted Post, N. Y.; Mrs. A. H. Blair, Chicago; Mrs. Irene Rinick, Chambersburg, and Miss Anna, at home. He is also survived by two sisters, Mrs. David Snively, Chambersburg, and Mrs. Emma Royer, Waynesboro, and a brother, Dr. M. Bonbrake, Taylorsville, Ill.

He died Sunday, November 22, in the Markleton Hospital, Somerset County, at the age of seventy-one years.

IN MEMORIAM—FREDERICK B. REED, M.D.

(The following resolution was adopted by the Clearfield County Medical Society, November 11, 1914.)

With profound regret and a keen appreciation of its loss, the Clearfield County Medical Society records the death of its oldest member, Dr. F. B. Read of Osceola Mills; be it

Resolved, That the memory of his many virtues, his loyal and earnest support of the Clearfield County Medical Society, his helpful interest in the furtherance of all its worthy aims and his unfailing courtesy to his fellow members, be an incentive to all those who survive him.

W. B. HENDERSON.
S. C. STEWART.
AUSTIN C. LYNN.

IN MEMORIAM—ROBERT WALKER RAMSEY, M.D.

Dr. Robert Walker Ramsey was graduated from the Jefferson Medical College in 1874, and located at St. Thomas, removing to Chambersburg in 1891 where he maintained an active practice until incapacitated in 1906. He served on the State Medical Examining Board from 1900 to 1906; was coroner for the county from 1879 to 1882; was thirty-second degree Mason, member of George Washington Lodge of Chambersburg; was vice president and director of the Chambersburg Trust Company, and a member of the medical staff of the Chambersburg Hospital. He died at his home in Chambersburg, December 26, the result of arthritis deformans, aged sixty-four.

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ORIGINAL ARTICLES.

ORIGINAL SURGICAL USES OF BONE GRAFT.

BY FRED H. ALBEE, M.D., F.A.C.S.,
New York.
Professor of Orthopedic Surgery, New York Post-graduate Medical School, and University of Vermont.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

In presenting the topic of bone grafting for your consideration, I would first state that I have successsfully applied the autogenous bone graft in over two hundred and fifty cases during the past four years, and as the length of time elapses and the increasing number of varying instances of its application multiply I feel more convinced of its reliability as an indispensable surgical agent, its success being greatly enhanced by the accuracy of technic made possible by my motor saw and its attachments. From this extensive experience I believe I have made some important observations in the use of the bone graft which I will mention briefly before taking up the special indications for its use.

It is my belief that the more closely we observe the histology of bone and, where possible, apply like bone structure to like bone structure, the surer we are of a perfect result in preserving live bone cells throughout the graft, instead of simply supplying a bone scaffold along and over which new bone can form to give us the desired result; so that it is my practice, where possible, to contact marrow substance of the graft to marrow substance of recipient bone, endosteum to endosteum, and periosteum to periosteum,—thus ensuring a most rapid establishment of nutrition to the graft through a rapidly established and profuse blood supply. The bone graft, being living tissue, has certain bacteria-resisting properties and will unite satisfactorily if placed to span certain attenuated pyogenic and tuberculous areas. Bone of one structure when placed into bone of a different structure (as cortical bone into a bed of cancellous bone) will change itself to conform to its bed. Whether the graft lives as such or is replaced by new bone formation, cell by cell, or merely acts as a conducting scaffold, fortunately, does not matter; as in either event, it serves the purpose from a surgical standpoint.

As foreign material (metal) of any sort, when implanted in bone causes absorption of the bone into which it is placed, inhibits osteogenesis, and encourages infection, it does not furnish a reliable surgical agent. The autogenous bone transplant, when placed in contact with bone, not only stimulates new bone proliferation on the part of the recipient bone but produces new bone on the part of the implanted graft itself, and resists infection; it thus furnishes a most reliable agent for repair of bone defects.

I will first describe the application of the bone graft in the arrest of tuberculosis of the spine, Pott's disease. This disease involves the cancellous structure of the vertebral bodies, disintegration of which takes place; after which a crushing together follows, with a resulting separation of the posterior segments; *viz.*, the spinous processes. The vertebræ may be considered to be levers rocking upon their lateral facets as fulcra. If the anterior arm is depressed, the posterior arm is elevated; the fulcrum remains constant. To overcome the tendency of the anterior arms to become depressed and to crush into each other as the disintegration of the bodies progresses, thus producing an increased angle of kyphosis posteriorly, recumbency in hyperextension of the spine, spinal braces, or plaster of Paris jackets have heretofore been applied. These methods can not efficiently immobilize the diseased vertebræ themselves, because of different mechanical conditions and the always present vertebral motions from respiration. Only general alignment can be maintained by external appliances. By securing the spinous processes posteriorly one to the other in the diseased area, we can prevent the crushing effect on the vertebral bodies anteriorly, stop the increasing kyphosis, arrest motion of the diseased bodies (a potent element in keeping active a tuberculous bone lesion), and place the parts in a most favorable condition for the cessation of the activity of the disease.

This can be easily, quickly, and accurately done by implanting or grafting a strip of bone into the tips of the spinous processes, sufficiently long to span the spines of the diseased vertebræ and also to include one or two spines above and below those directly involved. The technic of the operation, as I now practice it, is as follows:—

With the patient in the ventral position on the operating table, and the back and leg prepared for operation, a curved incision is made through the skin and subcutaneous structures of sufficient length to furnish, when the skin flap is turned back, an ample exposure of the spinous processes to be spanned (if in the dorsal region, two spines above and two below those of the vertebræ directly involved; if in the lumbar region, one spine above and one below). The supraspinous ligament is then split along over the tips of the processes; the interspinous ligaments are next split, exposing further the spinous processes, which are then split longitudinally in halves; and one half of each (always on the same side) is broken over to produce a gutter or groove to receive the graft. This is done with a specially broad-bladed thin osteotome wide enough to span two spines at a time (made for author by Tiemann and Company), so as to more surely produce a straight gutter for the implant. Its width, also, guards against any possible chance of its being driven through between the neural arches into the spinal canal. Many times, especially in the upper dorsal region, it is difficult to split the spinous processes, and one is able, after getting through the enlarged end, to cleave off from the side of the spinous processes only shavings of bone with periosteum and the attached ligaments. This serves the purpose apparently as well as if the processes had been accurately split. The gutter is formed and the graft is inserted by precisely the same technic as in the lumbar region, where the spinous processes can always be accurately split. The depth averages about one half inch, but varies with the age of the patient and the length of the processes. Care should be taken not to go too deeply, for fear of injuring the neural arches, as it is only necessary to furnish bone contacts, and the nearer to the tips of the processes the graft is placed the greater will be the leverage upon the individual vertebræ.

By this procedure, it is obvious that very little of the natural supporting structures are interferred with. The strong supraspinous ligament is simply split in half (not divided at any point) and the short interspinous ligaments are not weakened. Then, too, as but half of each spine is broken, we still have the remaining half performing its natural and full function as a lever. Bleeding points are ligated, and excess of oozing is checked by a hot saline gauze pack which is left in the back wound while the graft is being obtained from the tibia.

The length of the graft having now been determined by measuring with calipers or a flexible probe, the gutter made in the spinous processes, the leg is flexed on the thigh without any change of position of the patient. A generous skin incision over the anterior internal surface of the tibia down to the bone is made, and the muscle attachments to the crest and outer surfaces are freed. The length and contour of the required graft are marked out with the scalpel in the periosteum, these measurements having previously been determined by means of calipers and flexible probe. This segment of bone is then easily and quickly removed with the motor saw, and should include periosteum, endosteum, and what marrow substance is found attached to the medullary surface. In other words, it is the whole thickness of the cortex, the width varying with the size and age of the patient, and averaging one fourth to

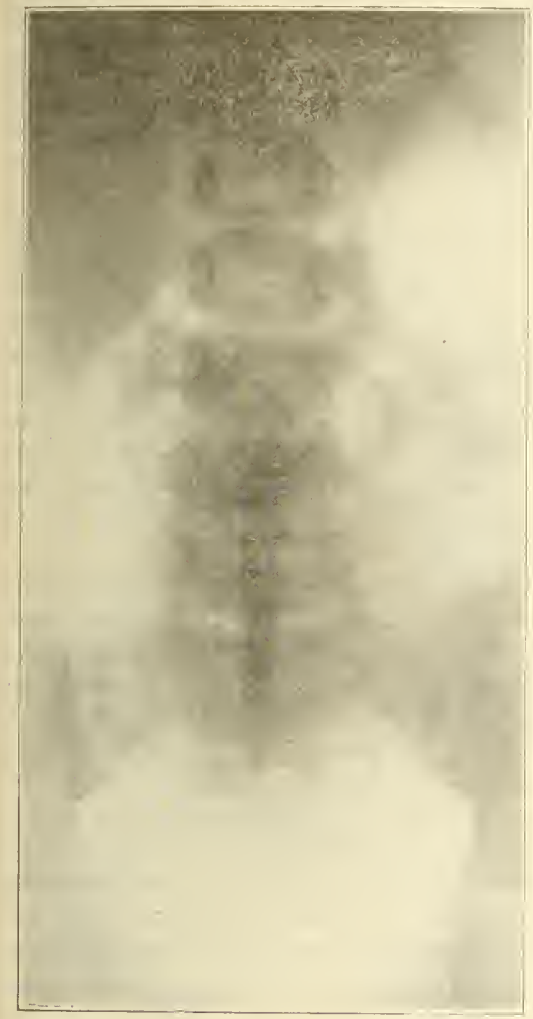

Figure 1. A very acute case of tuberculosis of lumbar spine, three months after bone graft was inserted. Child remains well to the present time, three years after operation. The graft shows distinct evidence of enlargement from proliferation as compared with skiagram obtained soon after the operation.

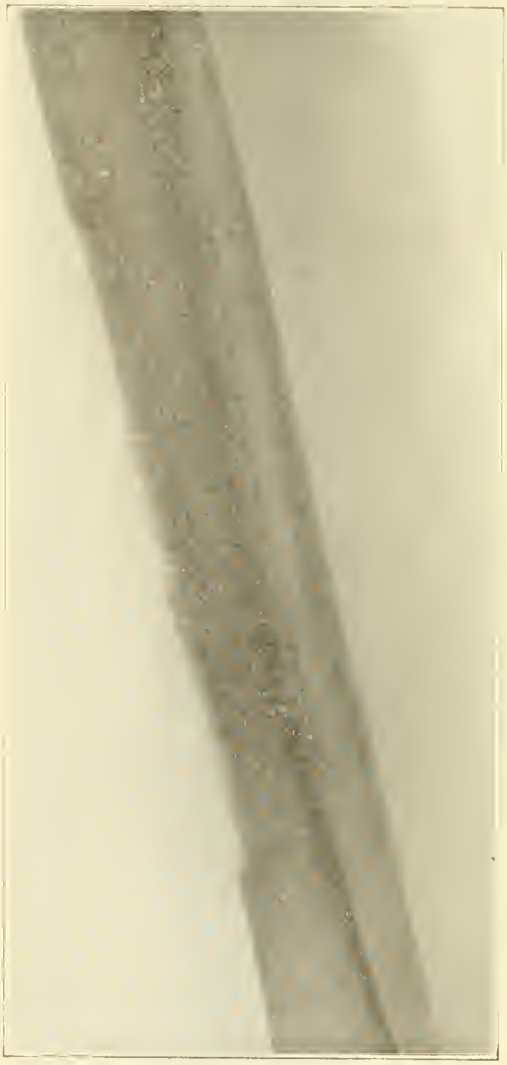

Figure 2. Skiagram of tiba from the crest of which a graft of large diameter four inches long had been removed only ten weeks before. The rapid bone proliferation, stimulated in accordance with Wolff's law, has almost completely filled in this cavity in this short space of time. At the same time that the tibia has been returning to its original strength, the bone graft has been hypertrophying under the stimulus of its new mechanical environment by the influence of the same law.

five eighths of an inch. The ends are trimmed of their sharp corners on the periosteal side, and if the kyphosis is slight the transplant is placed immediately in its bed. If, however, the kyphosis is marked, and it is impossible to imbed a molded graft, then a straight one is made to approximate the deformity by making numerous saw-cut nicks, transversely in the graft, on the marrow or broad surface of the graft, throughout its length, and then bending it. The sharpness of the deformity determines the number of cuts and their distance apart.

The graft, either straight, molded or prepared to be bent, is forced tightly into the split spines; and interrupted sutures of strong kangaroo tendon are placed through the split supraspinous and edges of split intraspinous ligaments to draw them, with the spinous process halves imbedded, together over the graft. The sutures are begun at the center of the transplant, to better hold it in position. The ends of the graft should be particularly and securely fastened, and it is well to place the small bits of bone fragments, which were trimmed from the corners of the transplant, about and beneath the ends of the graft, to act as individual bone foci in securing rapid an-

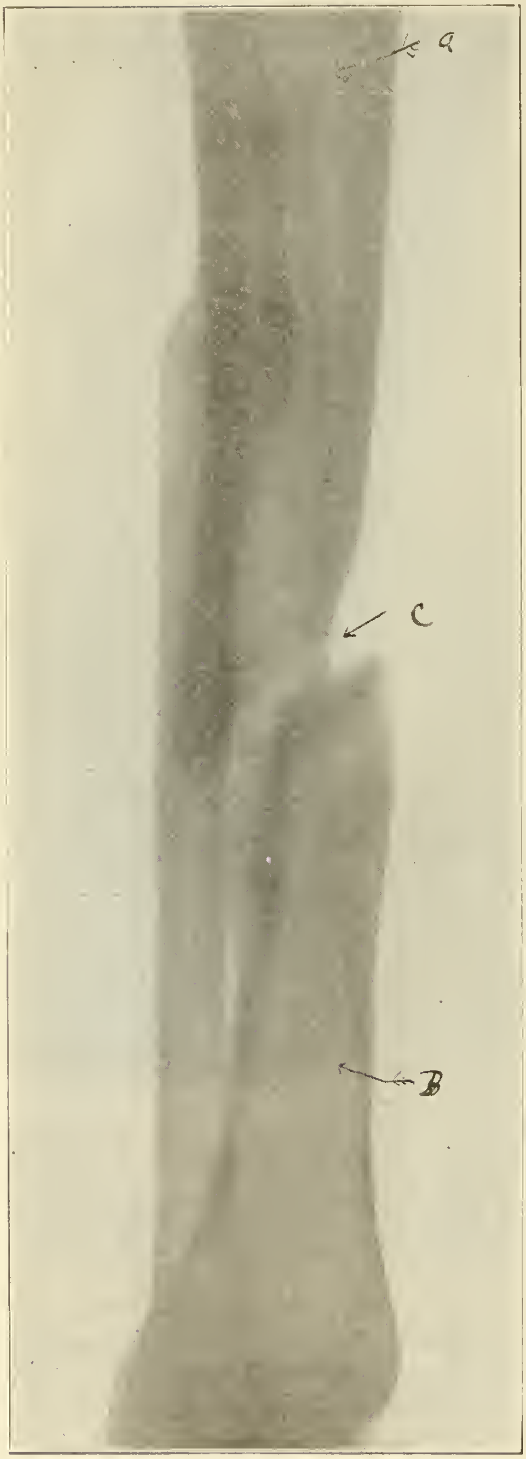

Figure 3. Skiagram taken ten weeks after sliding-inlay-graft operation in a fracture of the tibia ununited for eight months. The twin circular motor saw was used to make the gutter (about 2 1-4 inches long) in lower fragment. This strip of bone was removed from gutter and was then divided longitudinally with motor saw into two small strips which were in turn pushed through my surgical lathe and made into dowel grafts. The twin saw was again used to obtain the inlay from the upper fragment. The saws were allowed to cut through to the marrow cavity for a distance of six inches from the lower end of this fragment. The long graft thus produced was then free at its upper end by cutting across it with a motor circular saw so small that it did not encroach into the bone on either side. This insert was then turned end for end and slid downward into the gutter already for it in the lower fragment. The graft was held in place by heavy kangaroo tendon and dowel grafts, as indicated in the diagram. A, C and B indicate the graft firmly united to both fragments.

kylosis of the graft with the divided spines. The straight and molded graft is always placed in the spinous processes, edgewise or with its broader diameter anteroposteriorly; whereas the bent graft is placed with its broader diameter laterally and its periosteal surface posteriorly.

The skin flap is now drawn over the grafted area and sutured with a continuous catgut suture. The object of the curved skin incision is to bring the line of sutures away from the grafted area, as a precaution in case of stitch infection and prevent the cutaneous scar from adhering to the spine. Also, it is obviously an advantage to have the skin wound to one side of the spine, as the patient must remain in the dorsal position on a fracture bed for six to eight weeks.

The above described sequence of the technic is important because by preparing the back wound first and packing it with a hot saline compress we secure hemostasis and control the blood clot about the graft. A certain amount of blood clot, however, facilitates the bone growth.

Postoperative treatment consists of recumbency on the fracture bed for five to eight weeks. Following this, the patient is allowed to sit up and is permitted to walk about for a part of the day. The period of convalescence should vary from three to eight months, the duration of time depending upon the location of the implant, its shape (whether straight or curved with transverse saw-cuts), and on the general condition of the patient.

Plaster jackets and braces should be avoided except in possible instances of marked kyphosis in the dorsal region where a graft has been bent into place.

This method of treatment applies to all cases, at all ages, where pain or muscle spasm demands immobilization of the diseased vertebræ. The prognosis in all operated cases is most favorable for the relief of all symptoms and the relief of increasing deformity.

For the repair of old ununited fractures, and in certain fresh fractures, I have found the bone inlay graft particularly serviceable, and when employed by the following method it should produce successful results. I have been employing this inlay technic since December 1911 and have to date operated in forty-eight cases, with 100 per cent. of union and only one case resulting in angulation of fragments. This is a supplemental report to those appearing in the *Journal of the American Medical Association*, August 3, 1912, page 353; *The Post-Graduate*, November, 1912, Stereoclinic, The Southworth Company, 1913; and *American Journal of Surgery*, January, 1914. Buchanan in October, 1912, *International Journal of Surgery* and Henderson in *Annals of Surgery*, April, 1914, have also reported successful results with the inlay type of graft in ununited fractures.

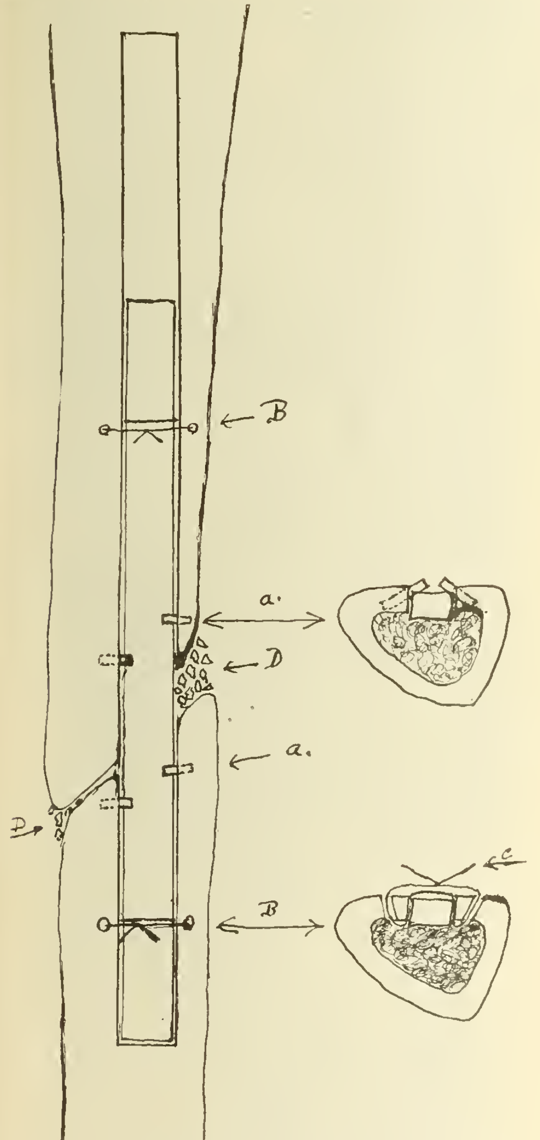

Figure 4. Diagram of inlay in place and means of holding it in case of which Figure 3 is skiagram. A indicates dowel graft pegs in place for purpose of holding inlay securely in its gutter at ends of fragment. Kangaroo tendon can be used with almost the fixation effectiveness of the peg graft. The holes for the dowels are drilled over the graft (while it is held firmly in place with a Lowman or Berg clamp), into the sides of the gutter bed with an electrical drill, which is of the same size as the dowel cutter which shaped the graft pegs. B indicates heavy kangaroo tendon in place in drill holes in side of gutter, and tied over graft at C. This method brings two strands of the tendon over the graft. The tendon is threaded (from without in) into one drill and carried across the bottom of the gutter and threaded through the other drill hole (from within out). The loop of tendon in the bottom of the gutter is then pulled up and the graft placed under it as well as all the other loops. The tendon is then tied tightly over the graft. D indicates small irregular-shaped grafts which are placed between the fragments' ends and around the large inlay graft at this point.

The fracture is exposed through a generous skin incision and, with the skin and subcutaneous structures retracted, the fracture ends are cleared of adhering tissue; and where angulation or overriding is encountered this is corrected by removal of bone, manipulation and traction. The ends are freshened, and, with the fragments held in proper alignment, a gutter is formed with the author's motor twin-saws, reaching well beyond the sclerosed fracture ends. If it is the tibia, the parallel cuts should extend into one fragment about five inches, and into the other two and a half inches. The strips of bone between these cuts are then removed by cutting with a small osteotome or, better, with a small circular motor saw, which is so small that it does not encroach into the sides of the gutter. If the fixation of the fragments is difficult, the short graft is sawed longitudinally into two or three portions, each of which is molded with my surgical lathe into the shape of nails to hold the long inlay in place. In the majority of cases, however, heavy kangaroo tendon affords ample means of holding the graft and immobilizing the fragments. This is accomplished by drilling the bone on either side and inserting the tendon through the gutter, and placing the graft beneath each kangaroo ligature, which is then tied tightly over the graft. In this procedure, the long graft is slid endways into the gutter made by removing the short graft, which may be used to fill the vacancy in the gutter made by sliding the longer segment, if it is not needed to be used as nail material.

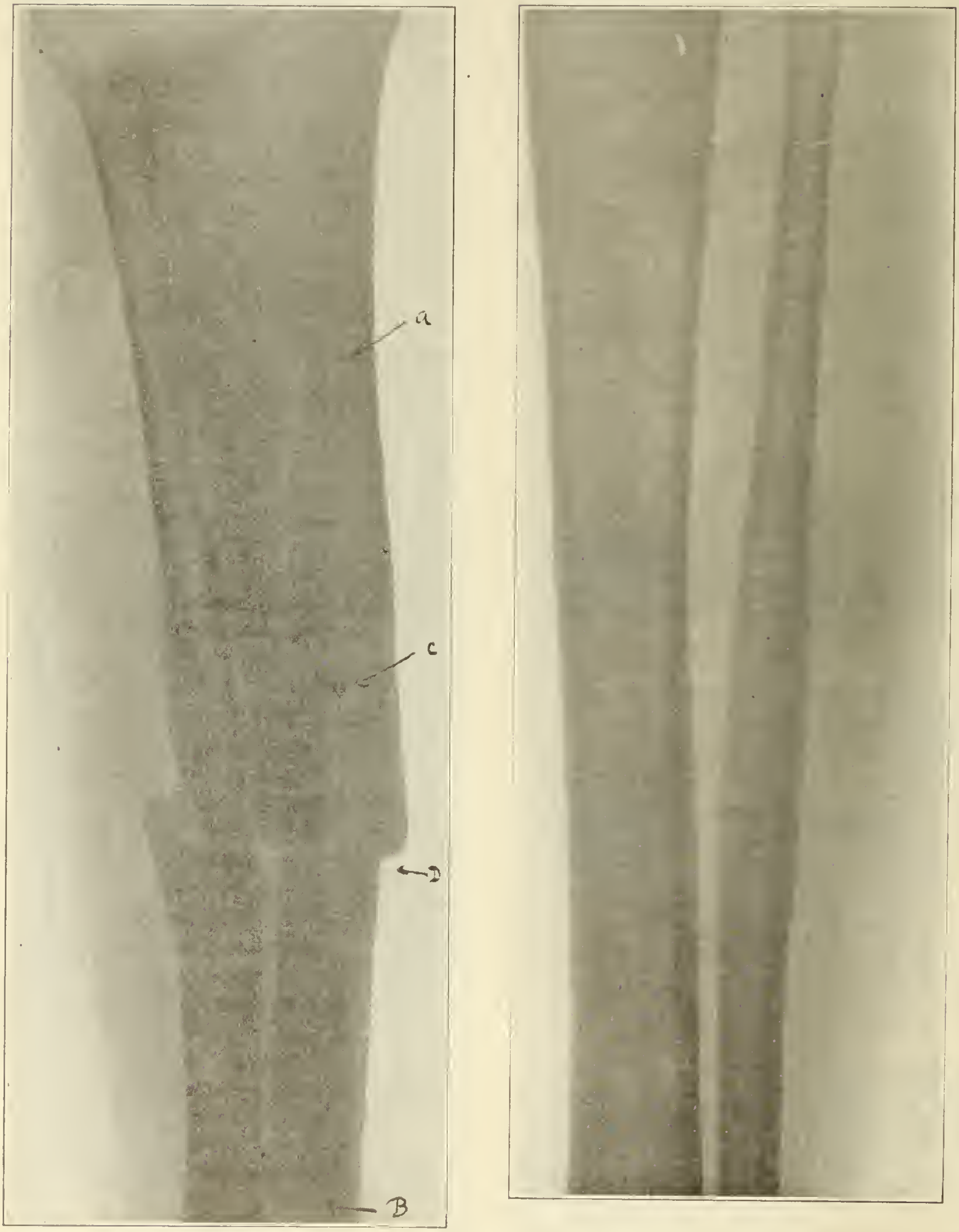

Figure 5. The skiagram to the left is that of an old ununited fracture of the right tibia of eight months' duration, which has been united by the insertion of the inlay graft A B. The ends of the tibial fragments were pathologically changed and much sclerosed. C is a fragment of silver wire which was left in at a previous operation. Union was firm at the time the plaster splint was removed five weeks after the bone graft operation. The graft was removed from central portion of the anterointernal surface of the other tibia by means of the author's twin saw. The gutter in the cortex of the fragment end was made with the same twin saws. The skiagram to the right is that of the left tibia twelve weeks after the removal of the graft. As far as one can judge the tibia under the influence of Wolff's law has returned to its full diameter and density.

I have never in any case failed to obtain efficient fixation by this technic. The added simplicity of obtaining the graft material through the same wound and from the same bone fragments being operated upon, is obvious. When possible, the long inlay graft should always be obtained from the proximal fragment, the substance of which has not been weakened by osteoporosis to the degree of the distal fragment, that is, if the fracture is of any considerable duration. If there has been a loss of substance, or if the case is one where there is severe comminution of the fracture ends and there is danger of shortening from muscle pull, then strips of bone of equal length from each fragment end are with twin saws removed by cutting ends with a narrow chisel, in a way to form a tongue at either end of the gutter to fit into the grooved end of the transplant later to be removed from the uninvolved tibia (with the motor saws adjusted the same distance apart as when cutting the gutter in the fractured bone). Shortening from muscle pull is very effectively prevented by the tongue and groove joints which become locked together more firmly the greater is the tendency to shortening. As the marrow cavity of ununited fracture ends has usually filled in with new formed bone for some distance away from the fracture, the transplant is supported and prevented from dropping into the marrow cavity, and displacement of the graft is further prevented by the tongue and groove joint at its ends. Additional security is obtained by either pegging in the graft to its bed with live bone pegs (formed by the motor-driven doweling instrument of the fragments of bone removed from the gutter) driven into holes bored laterally into the sides of the gutter so as to bind the graft firmly in place; or by passing a double strand of large-sized kangaroo tendon through drill holes in each side of the gutter near the fractured ends and placing the graft in position, with one strand remaining beneath it while the other loops up over; the ends are then tied securely over the graft, the soft parts are approximated, and the skin wound closed by continuous catgut suture, without drainage, and a plaster of Paris fixing dressing is applied. In all ununited fractures numerous small bone chips are placed in between the fracture ends and around the graft.

I am now using the sliding graft method, particularly in fresh fractures of large bones where operative treatment is necessary, with the following change of technic: Instead of making the gutter walls parallel, by cutting entirely through to the marrow cavity with the twin saws, I simply outline the gutter with the twin saws by allowing them to cut into periphery of cortex about one sixteenth of an inch and then change to the single saw and cut the gutter to the marrow cavity, so that its walls converge, making the width at the bottom less than at the surface; then sliding along the longest segment, it can be forced in tightly in place like a wedge by the Lowman or Berg clamp and is pegged in as before described. In this way I have succeeded in holding the most difficult fresh and united fractures of femur and tibia. This method has also been successful in cases of ununited fractures where wiring, medullary bone graft and aluminum dowels, and Lane plating, etc., have failed.

For ununited fractures of the neck of the femur, I have used a large live bone nail in place of metal spikes, first drilling a hole with my motor-driven drill through great trochanter and neck into the head, detaching the drill from the motor so as to leave the drill in position while forming the bone nail from a section of bone removed from the crest of the tibia and shaped with my motor doweling instrument or surgical lathe. The cortical bone is stronger when obtained from the lower third of the tibia and, therefore, bone from this region should always be used for this purpose. The drill is then carefully removed and the live bone nail is driven into place with a mallet. As the drill used is the same size as the dowel-shaper, a perfect fit is assured. The limb is then put up in plaster, in Whitman's abduction position. The importance of always placing the limb in the neutral position, as far as muscle displacing pull is concerned, can not be too strongly emphasized in putting up all fractures, especially near joints, where internal methods of fixation have been employed. Metal nails, Lane's plates, or bone grafts of proper strength do not bend or break when the limb is put up properly, but give way, from screws pulling out, etc., on account of unsplinted limbs, in which there is delayed union, being allowed to functionate too early.

No internal fixation appliances will unaided withstand muscle pull and weight-bearing. Their only purpose is to aid in securing bony union which is, alone, capable of resisting the stress of function and the fact that metal spikes, when inserted for fracture of the neck of the femur, bend in the presence of a failure of union, from weight bearing, is no argument against the effectiveness of the bone graft peg, whose main purpose is to secure union through its osteogenetic activity at the same time that it serves as an internal fixation splint. In view of the poor blood supply and sluggish callous formation of the neck of the femur the advantages of the autogenous graft are obvious. So much so that a very prominent authority on the treatment of fractures has stated to me in a personal correspondence that he believes that "this is the ideal treatment not only for old fractures but early fractures that are not impacted."

The bone graft furnishes a perfectly satisfactory means of correcting paralytic or congenital club foot. Here it is used in the form of a wedge-inlay graft. In the congenital type of relapsing club foot in children over two years I split the scaphoid bone transversely into equal halves; overcorrect the foot, which separates the split halves of the scaphoid, and with a wedge-graft procured from either the tibia or from the cuboid bone of the deformed foot (when the cuboid is found to be particularly hypertrophied). This wedge of bone is cut slightly larger than the gap between the split scaphoid would indicate (while the foot is held in corrected position) so as to maintain the full corrected position of the foot when the graft is forced into position. Drill holes are made through the scaphoid halves and wedge graft, and a kangaroo tendon ligature is passed through and tied over the graft so as to hold it securely in position. By this method, the inner or short side of the foot is lengthened and the foot permanently corrected by a remodeling of its bony framework, thus avoiding the otherwise constant danger of relapse.

In paralytic club foot, such as met with in infantile paralysis where adduction deformity takes place, chiefly at the mid tarsal joint through paralysis of the peroneal muscles, I slice off the articulating surfaces of scaphoid and astragalus, and force the wedge graft in between these surfaces, thus stiffening the joint and correcting the foot deformity. If deemed advisable, the peroneal tendons are drawn up tight and fastened under an osteoperiosteal flap lifted from the external malleolus (Codivilla-Gallie) and these tendons thus serve as external lateral ligaments and prevent the outer border of the foot from dropping. By this procedure the deformity of the foot is not only permanently corrected but the very awkward flail condition, which results from a laxity of the astragaloscaphoid joint, is affectively overcome and not at the expense of diminishing the length of the already short foot, but by actually lengthening it.

DISCUSSION.

Dr. J. Torrance Rugh, Philadelphia: To attempt to discuss this paper would be a work of supererogation and I feel it the better part simply to emphasize a few of the points made. In the first place the discussion as to the fate of the bone graft has been followed out pro and can by many men and does not in the least concern us as practical and clinical surgeons. The great and important truth is that it produces results, and that is what we are seeking. What matter if it is absorbed and replaced by a new formation or if it becomes adherent and grows into place as a distinct entity? The fact that the patient recovers is all-sufficient.

In a case of my own in which the patient died four weeks after operation, from pyocyanic infection originating in an acute mastoid abscess and involving two psoas abscesses and an empyema, sections showed bone proliferation taking place from the spinous processes into the graft. Observation has shown apparently solid union after six or seven weeks, though I do not believe it is solid until after six or eight months. Another very important point is that the operation is done altogether in perfectly normal tissues. The graft is taken from a normal tibia and placed in normal spines, and the results must, if it is done aseptically, be good. At the time of operation, care should be taken that the graft is of sufficient length to extend well above and below the site of the disease as the spine can be controlled only by such a measure.

Another very important indication for the operation is that these patients are dependent for from three to eight years under the most careful and efficient mechanical treatment, while after operation they become independent and self-supporting within a year. With adults, this is of the utmost importance and alone would justify and recommend the treatment. In regard to the radius transplant shown, I have had two cases in which I placed a graft with one end in contact with the ulna and the other with the carpals and have had excellent immediate results, though I can not foretell what will be the ultimate results and whether the graft will grow in harmony and rapidity with the ulna and carpals or will remain as at present and allow recurrence of the deformity.

The entire subject opens a field for the care of these most deplorable cases whose limitations are beyond our imagination and are circumscribed only by our ability to apply it and our skill to do the work.

Dr. Charles W. Delaney, Altoona: I wish to emphasize the fact of the simplicity of the operation, both in the work and in the scarcity of instruments. It is not absolutely essential to have the complicated machinery which Dr. Albee has shown us. I have done seven of these operations with chisel and mallet, resulting in perfect union and without infection in any case. The oldest case of my series in point of time since the operation is three years. The child since that time has gone to school in the country, walking three miles and never missing a day in attendance. He has grown nine inches in height and has perfect flexion, extension and rotation.

I would like to suggest to men who are doing orthopedic work in the smaller hospitals to give an annual picnic to the patients in all their cases so that they can keep in touch with them. We have had in Altoona the coöperation of the Sunshine Society, which attends to all the details of the picnic. The children are taken to the park in special cars, where they are given sandwiches, ice cream and cake. While they are enjoying themselves I have the opportunity to watch the results of the work I have done and see where there is a necessity to do more to obtain a better result. I give a boy a note to his father to appear at the hospital on a certain date, when the boy is examined and a further treatment suggested.

I would like also to suggest that where you have difficulty in obtaining money for braces in charity cases, do as I have done. I presented my dilemma to the Sunshine Society and the ladies immediately took up this work and have been my chief support for over seven years. Those of you who are thus handicapped, fall back on your friends and they will come to your aid.

A little humor, especially the humor that sees the comedy of some of our tragedy, is a valuable quality to encourage.—Hugh Black.

ACUTE SURGICAL METASTATIC INFECTIONS WITH ESPECIAL REFERENCE TO BONES, JOINTS, AND PERIARTICULAR STRUCTURES.*

BY NATHANIEL GINSBURG, M.D.,
Philadelphia.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

The frequency of nontraumatic acute surgical metastatic infections involving bones, joints, and periarticular structures creates the necessity for careful study of this most interesting surgical topic.

Great advances have been made during the past five years in evolving reconstructive operations upon bones and joints, and methods which were crude a decade ago are now almost perfect in their technical detail. We owe much to Murphy, Albee, G. G. Davis, Rosenow, and McWilliams of this country, and to Stiles, MacEwen and Axhausen abroad for their untiring efforts successfully to reclaim individuals with crippling deformities of the skeletal type. However, osteoplastic and arthroplastic operations will always be attended by much difficulty, and some hazard to the patient, and successful results are accomplished only if careful attention is paid to strict aseptic and technical details. The heroic attempts which are made to overcome these deformities have been necessitated by the failure and difficulty in recognizing early, acute and chronic metastatic bone and joint processes, which are very often allowed to run a self-limited course.

Tragic sequellæ should be obviated by strenuous efforts at an early diagnosis, with a view to recognizing the presence of the microorganismal agency underlying the production of the clinical syndrome of an acute intoxication.

Etiology. The lack of clinical and bacteriological proof of the existence of idiopathic rheumatic arthritis, as an entity, is a positive reason for demanding that surgical observation be made of these cases from the very outset of the symptoms. Medical treatment of infections of the bones, joints and ligamentous structures based upon a plan of expectancy bears the same relation to medical treatment of an appendicular abscess, the result of delay in dealing with the pathological process at its inception where it was possible to do so.

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*Illustrated by lantern slides of various bone and joint infections.

The bacteriological evidence of the type of joint infection is not necessarily dependent upon the isolation of the microörganism in the aspirated fluid. Careful studies afford sufficient clinical proof of this fact.

In children periarticular infections of the pneumococcus type are accompanied by great articular effusion but no pneumococci are present in the aspirated joint fluid.

In practically all metastatic infections of the joints of streptococcic origin the streptococci enter the joint fluid early and are readily isolated. However, since culture and smears made from aspirated inflamed joint fluid give negative results in the early stages of the disease, the clinical picture should take precedence over a delay of days awaiting a bacteriological diagnosis. On the contrary in metastatic osteomyelitis in the neighborhood of a joint, the joint effusion may be present for many weeks without the microörganisms being detected in the joint fluid.

The transmission of the bacterial agent to the joint or bone is either through the lymphatic or hematogenous channels in non-traumatic infections of these structures. The analogy between acute infections of the lining serous membranes of joints and bursæ, and the serous lined cavities of the abdomen and chest is interesting and worthy of some consideration. The most common surgical affection of the abdomen is appendicular disease. No one would hesitate for a moment to pronounce localized or diffusing peritonitis, pleuritis or pericarditis, anything but an acute infectious state caused by a sudden metastatic bacterial deposit. The delicate endothelial lining of the joints and bursæ are just as sensitive to bacterial insult, and a pathological state in these two structures of an acute infectious nature is always the result of distribution of bacteria from a primary focus. The same observations hold true in the case of acute suppurative bone disease. Careful inspection of the naso-oro-pharyngeal structures, the urogenital apparatus, and the gut tube with its accessory digestive structures will usually clarify an obscure source of infection. The absence of a primary focus will often be apparent, but it is because our diagnostic means are not sufficient to render localization possible.

Diagnosis. The time elapsing between the appearance of the metastatic outbreak and the onset of the primary infection is often of some value in clinically speculating upon the type of infection present. We know that clinically streptococcic metastatic arthritis occurs very early; one to five days following the initial infection. On the other hand, gonococcic arthritis is a matter of two or three weeks following the primary infection before the joint deposit becomes apparent. Again, typhoidal osseous and arthritic involvement usually occurs late in the disease at a time when convalescence seems assured.

Exposure and trauma probably precipitate or tend to localize the infection either in the joint or bone acting therefore only as a contributing agent.

The sudden onset of pain in one or more joints, accompanied by elevation of temperature, increased pulse rate, local swelling, heat, tenderness, and immobility in and about the affected joint should at once direct attention to the presence of a specific process of an infectious nature. The presence or absence of a chill attending joint involvement is believed by some to be a valuable prognostic sign of much import relative to future ankylosis of the infected joint. When the process is acute osteomyelitic in nature, the onset may not be so sudden but may be slowly ushered in by pain in the bone or primarily in the neighboring joint, if the metastatic bacterial deposit in the bone is in close proximity to a joint. It is this latter type of bone disease in young children which is so frequently termed rheumatism and treated by therapeutic specifics as such.

Very often the process is ushered in by an overwhelming toxemia in which the constitutional symptoms of an acute intoxication plus the local manifestations in the involved bone or joint point at once to a grave surgical affection.

Where a previous infection has been present, or when a primary source can be discovered, the evidence of the nature of the process is almost complete and the indications for treatment clear.

Treatment. The greatest danger in acute metastatic septic infection occurring in bones and joints is delay after the appearance of the first clinical symptoms. Since the lesions are essentially destructive in nature, the first efforts at treatment should be preventive and not reparative (Murphy).

Immediate osteotomy and thorough removal of the diseased bone, with adequate drainage should be the rule in all osteomyelitic infections. It should be borne in mind when attacking a long bone to relieve an acute process that the existence of primary suppurative periostitis is still a matter of considerable doubt. Cortical bone abscesses are rarely seen and when in doubt as to the existence of pus, exploration of the medullary cavity of the bone should be the rule in all cases of suspected deep-seated bone infection. Since the tissues of a joint that is the seat of primary infection, whether hematogenous or traumatic in origin, are the bone and synovial membrane, efforts to preserve the integrity of these two very important structures should be made at once.

If possible the type of infection should be determined by blood cultures and careful examinations of the aspirated joint fluid. The primary focus should be assiduously searched for and all efforts directed at its sterilization if possible.

The inflamed joint should be put at absolute rest, and extension applied immediately. The separating of contacting joint surfaces infected and undergoing possible destruction appears to be the greatest single factor tending to preserve, or at least partly save the synovial structures and the consequent mobility of the joint. The practice of applying extension should not be limited to the lower extremities (Buck's extension) as it so frequently is, but the same care should be exercised to secure separation in the shoulder, elbow and wrist joints, and extension where there is a spondylitis should also be applied promptly. The duration of the extension, and the amount of weight applied is a matter of judgment which must fit each individual case.

Repeated aspiration of the joint when much fluid is present should be practiced, and it is important at this place to state that aspiration of a joint is a surgical procedure and should be done only under strictly aseptic conditions.

Joint aspiration is performed primarily to remove infective products under pressure which cause tissue necrosis and partial intramural destruction of the joint structure. If so-called "rheumatism" still remains purely a medical condition, then the polyarthritic joint effusions had better be left untouched unless they can be jointly studied, and, if necessary, aspirated by one qualified to do this service. Certainly the application of strongly pungent oils or ointments to the skin about a swollen joint or distended bursa is not treating the pathology but applying an anodyne for the local pain.

Repeated aspirations should be practiced depending upon the judgment of the surgeon. J. B. Murphy recommends the injection of a formalin-glycerin solution, two to two and a half per cent. liquor formaldehyd in glycerin, prepared twenty-four hours before use. He advises the introduction of from ten to twenty cubic centimeters immediately after the first aspiration, and a repetition "two, three or four days" later, "depending on the constitutional manifestations of the presence or absence of infection." The principle underlying the employment of this preparation is that it stimulates intraärticular polymorphonuclear leukocytosis and also produces a local cofferdamming of the joint surfaces. There is also some evidence tending to show that the use of intraärticular injections of formaldehyd in glycerin is productive of a constitutional leukocytosis.

Early and repeated aspirations of an infected knee joint with simultaneous injections of formalin-glycerin solution in prescribed amounts is not always productive of an arrest in the intraärticular process. The writer treated during the summer of 1913 a young man with acute septic arthritis of the left knee joint, accompanied by high temperature, chills, much effusion, pain, swelling and discoloration about the joint. The pain and swelling came on in the course of one day and was not apparently preceded by influenza, rheumatic symptoms, sore throat or any state from which the metastatic deposit could have taken place. He was promptly put to bed in a hospital with immediate aspiration and injection of the joint and Buck's extension. Repeated aspirations and simultaneous injections of formalin-glycerin solution were made, and in spite of all treatment he recovered with a firmly ankylosed knee joint without, however, deformity of the limb.

Vaccines have on many occasions demonstrated their value in acute suppurative joint states and should be employed at the time of the early appearance of symptoms of the joint invasion. While the use of vaccines is by no means always accompanied by immediate or even remote results, the lack of constancy in the desired effect should not preclude their use or trial. Streptolytic serum frequently used in large doses is often of immense value in known streptococcic infection.

Deformation of the limb or joint as the sequence of intraärticular inflammation should always be obviated by early energetic and efficient attempts to splint and extend the limb. The value and prognosis of subsequent operative procedures when necessary are largely determined by these early attempts to avoid marked ankylosis or other crippling deformities.

DISCUSSION.

Dr. Edward Martin, Philadelphia: Dr. Ginsburg's practical paper refers to a class of cases which in their acute manifestations call for a definite line of surgical treatment which is often delayed until irremediable damage is done because of the failure in diagnosis. The diagnostic failure is incident to the fact that the belief still obtains as to the infection called rheumatism unattended by suppuration attacking bones and manifesting itself in the form of acute and crippling pain, high fever and marked leukocytosis and a general septic condition. Such cases are invariably osteomyelitis. They attack almost invariably the metaphyses of bones, that is the region immediately adjoining the epiphyseal cartilage. They are often attended by a serous effusion into the neighboring joint. A careful examination will show the bones to be the seat of trouble, it exhibiting particularly bone tenderness which is characterized by the fact that pain is elicited by deep pressure and the longer the pressure is continued the worse the pain gets. It is in these cases irremediable damage may be prevented by a prompt opening not through the raised periosteum, as Ginsburg has pointed out, but down and into the medulla of the bone.

Concerning the joint infections and particularly those of the nonsuppurative variety, the future is undoubtedly full of promise. We all have a clear concept that these are due to an infection carried from some focus; that the first step in treatment is the finding of that focus. We are often successful, but unfortunately we often entirely fail in the location of the seat of entrance of the infection. Nor when we thus fail is the routine treatment largely successful. We know that rest is indicated and that this indication is not filled merely by the application of splints. Very often extension is needful. Therefore rest, the relief of pain by morphin in adequate doses and a general hygienic and systemic treatment represent the best that we can do unless the use of the ductless glands and particularly thyroid be regarded as helpful. The bacterins have given varying results, many astonishingly rapid cures so that we feel that our future therapy is developing most promisingly on these lines. There is no one, however, who feels the same confidence in their use as he does for instance in the administration of the antitoxin of diphtheria or in the case of recent syphilis the administration of salvarsan and mercury.

Dr. J. Torrance Rugh, Philadelphia: I wish to draw attention to two points made by Dr. Ginsburg. First, when he said that trauma did not cause tuberculosis in a given joint, I am sure he intended to say that trauma did not cause tuberculosis. Tubercular and other inflammatory processes are the result of an infection as was stated in the paper but that infection developed in this or that particular joint because of trauma; hence, trauma is the cause of the tuberculosis in this or that particular joint. This is a very important distinction in medicolegal work as the question is usually asked, "What is the cause of tuberculosis?" and the answer must be "The tubercle bacillus." Then the question is asked "Can trauma cause tuberculosis?" and the answer is "Trauma causes tuberculosis in this or that particular joint as it localizes the focus of infection where the germs already exist in the system."

Second, too great emphasis can not be placed upon the point that an acute infection in a bone or joint must be opened promptly to protect against extensive destruction of tissues and secure prompt recovery with the least possible interference with function. If the infection is allowed to develop, the destruction of neighboring tissues is rapid and at times irreparable and, in addition, there is more or less serious interference with the patient's health; while rest to the part is strongly indicated, relief from the injurious effects of the necrotic action of the inflammatory process is much more strongly demanded.

THE LATERAL REPAIR OF A LATERAL TEAR OF THE PERINEUM.

BY WILLIAM ROWLAND DAVIES, M.D.,
Scranton.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

I desire to bring out the point of the application of the anatomy of the pelvis to its mechanical action and a method of restoring normal mechanical function when the anatomical relations have been destroyed.

That the anatomy of the pelvis is difficult to describe and equally difficult to remember is due to the fact that we are describing the construction of a hemisphere as it were and trying to localize, visually, points on a circle, which is difficult as the view changes with each change of location of the viewer.

One can get no better in the way of a description of the levator ani muscles than the monograph on that subject issued by Dickinson in 1899. For a description of the lower pelvic structures, the plates in Deaver's Anatomy are ample and excellent. If, after this, one carefully studies the conditions existing in the normal nulliparous living woman as compared with those of the women who have borne children, especially by the aid of an educated finger, prefixed ideas may be changed.

There are certain facts concerning the methods necessary for the retention of the contents of the various cavities of the body, which hold good in the case of the pelvic cavity. In this cavity two elements come at once to our notice because of the peculiar functions of its outlet. We recognize here the need of structures which will provide stability to maintain closure and again other structures which will allow mobility for the active functions of the part.

Nowhere in the body is muscular tissue called upon to provide stability when in a passive condition, nor is it so required at the pelvic floor.

The posterior half of the pelvic outlet is maintained rigidly by the greater and lesser sacrosciatic ligaments and their bone attachments and environments. The motile structures here are the pyriformis, and coccygeus, and the levator ani on each side and the sphincter ani, centrally.

The retentive structures of this half of the floor are strong enough to absolutely prevent the descent of the fetal head through them, and they deflect it forward to the more yielding portion, but the smaller fecal mass finds an unimpeded normal passage there.

The anterior half of the pelvic outlet must also be provided with stabile and motile structures and these must be of such a nature as to provide elasticity during parturition, and stability when not undergoing that function. So we observe that this anterior half of the outlet through which the parturient head must pass has a number of structures peculiar to its own needs.

From above downward or from within the vagina outward laterally we can enumerate the following structures: The mucous coat of the vagina, the fibrous coat of the vagina, the pelvic fascia above the levator ani, the levator ani muscle, the inferior sheath of the levator, the superior layer of the triangular ligament, the inferior layer of the triangular ligament, the sphincter vagina and transversus perinei muscles, Colles' fascia, superficial fascia and skin; all of which have to do with the stability and mobility of the parturient outlet and all or a part of which suffer from the tear during lateral laceration.

A threefold wall of fascia serves to close in the anterior half of the pelvic outlet, which serves as a barrier to the expulsion of the pelvic contents. Observing from below upward we note that Colles' fascia and the inferior and superior layers of the triangular ligament are firmly attached laterally to the ischiopubic bones from tuberosity to symphysis and effectually close in the part except at the vaginal opening. All three fascias fuse at their posterior margin to make the perineal ledge which extends from the tuberosity of the ischium on either side to the center in front of the anus where they form the strong central perineal tendon, (called erroneously the perineal body). This perineal center affords the anterior attachment of the external sphincter of the anus, which posteriorly fuses with the coccygeal aponeurosis.

These fascias provide a horizontal floor for all of that part of the pelvic outlet where parturition is possible and must be stretched or pressed laterally or backwards from the center during parturition and they afford the sole serious obstacle to the precipitate expulsion of the fetus. This then being a fact, they are the structures which, being torn, lose for the floor of the pelvis its natural stability.

Above the fascial floor and lying upon it are the puborectal fibers of the leavtor ani muscles the anterior edges of which pass from the symphysis anteriorly along each side of the vagina (but not being attached to it), going

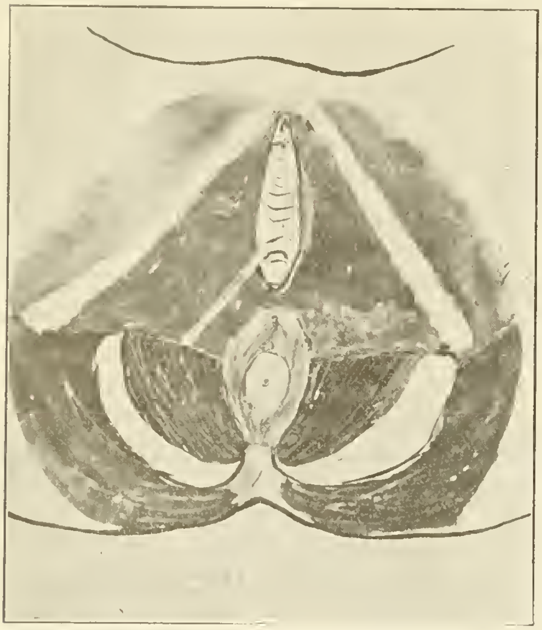

Diagram 1. Inferior aspect of fascial floor of pelvis. White line at location of lateral laceration.

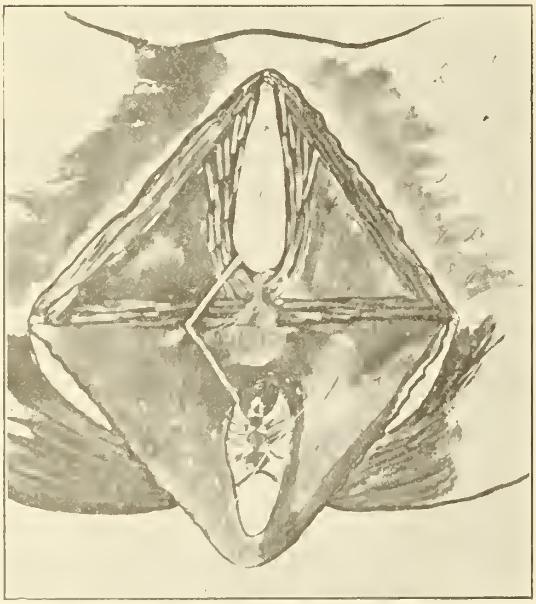

Diagram 2. Colles' fascia displaced and muscular interspace shown beneath the inferior layer of the triangular ligament.

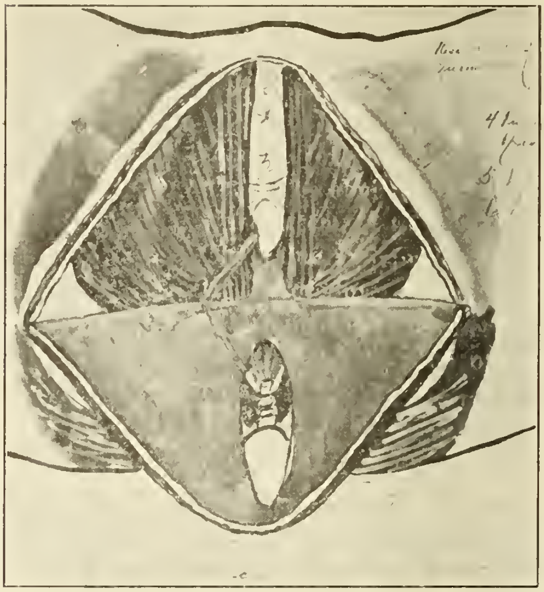

Diagram 3. The threefold fascial floor displaced and the levator ani shown. Note position of lateral laceration in both muscle and fascia.

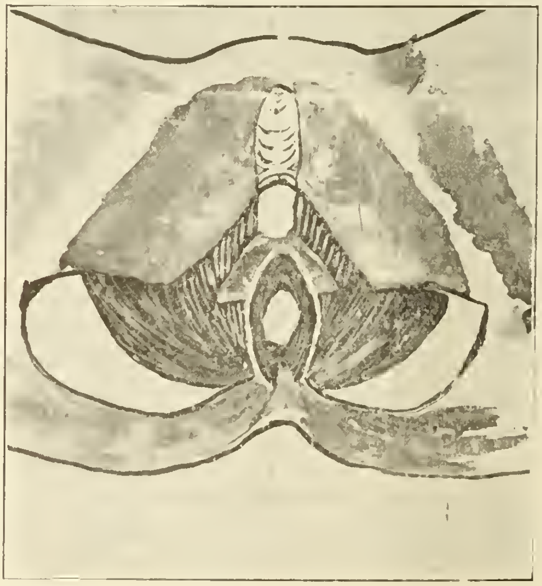

Diagram 4. Bilateral laceration of the fascial floor not involving the levators. Note direction of retraction of the three fragments.

back of the rectum where they intermingle with each other and the external sphincter and are inserted in the coccygeal aponeurosis. A few fibers of the levators are attached as they pass the perineal tendon forming a so-called deep transverse perineal muscle.

Between Colles' fascia and the anterior layer of the triangular ligament are to be found lying in the same plain as the facia, the sphincter vagina, transversus perinei and erector clitoris muscles.

The sphincter vagina running from the symphysis backward and the transverse muscles from the ischium mesially are attached at the perineal tendon.

We may thus observe that a tear of the posterior wall of the vagina, with lateral breaks in the fascial floor allowing the perineal center and anterior anchorage of the anus to fall downward and backward, would disclose the posterior vaginal wall or, as we describe it, a rectocele would be produced, which would be accentuated by the normal contraction of the unbroken levator muscles.

During parturition the head is deflected forward to the anterior half of the pelvic outlet and being impeded by the anterolateral bony margin is already pushing aside the relaxed levator muscles and begins to impinge upon the fascial barrier while dilating the vaginal orifice.

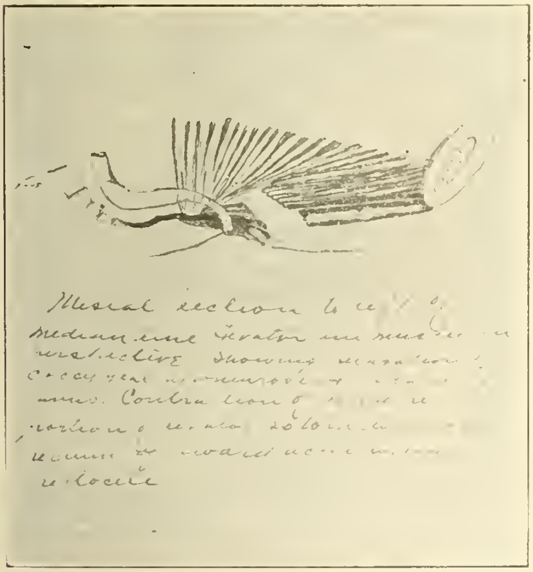

Diagram 5. Lateral laceration of all of the structures of the pelvic floor. Note direction of retraction of tissue and relaxation of fragments.

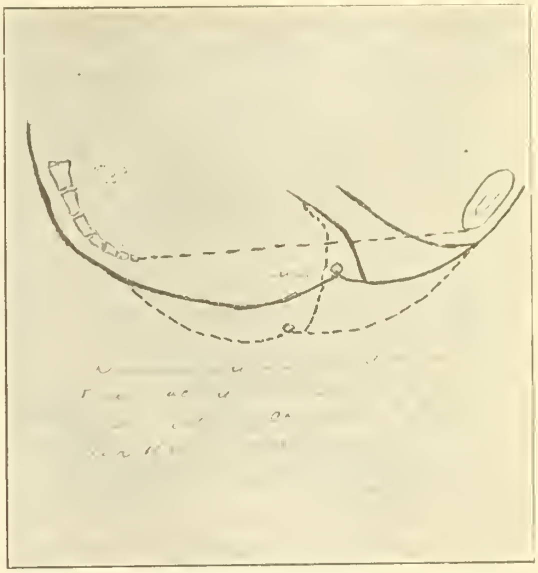

Diagram 6. (Adapted from Dickinson.) Lowering of pelvic floor and increase of size of vaginal outlet in a backward direction when the pelvic floor is broken by bilateral laceration. The anus displaces with the posterior fragment.

Thus we observe that the motile structures are the muscles mentioned, which when at rest, or in normal tone, have nothing to do with stability, or rather with the passive resistance to internal forces.

During defecation the levators relax, allowing the anus to prolapse, causing the posterior wall of the vagina to fall with the rectum, while the act is in process, but the vagina does not open at the ostium. When defecation is complete the levators return to normal tone and the anus and rectum are drawn up and forward again accentuating the approximation of the vaginal walls to the pubic bone above the normal closure at the ostium.

The descending head pushes before it the posterior vaginal wall, the puborectal portion of the levators with their perineal attachment, the two layers of the triangular ligament, the perineal ends of the sphincter vagina and transverse perineal muscles, Colles' fascia, and the skin, and centrally the strong perineal tendon.

If relaxation is not sufficient and the perineal center holds, the tear will be lateral, and with but few exceptions the tissues will break in the order named. The principal exceptions are that the levators may not rupture in their puborectal fibers, but will at their perineal attachment, and the mucous membrane and fibrous coat of the vagina and skin may not rupture but the fascia will, or the fascia may stretch and remain relaxed, while not torn.

The fascial floor tear may be partial or complete, that is from the vagina into it, or entirely through the perineal ledge into the ischiorectal space.

In a bilateral tear of the perineum there are three principal fragments: The posterior, containing the uninjured perineal center, body or tendon, whichever you wish to call it, with its muscle insertions, which falls backward and downward, prolapsing with the anus, which has thereby lost its anterior anchorage. There are also two anterolateral fragments, composed of the fascia which is now only attached at the ramus of the pubes and ischium, and has within its layers the outer ends of the transverse and the anterior ends of the sphincter vagina muscles, while above them are the fragments of the broken levator muscles if they have been so injured.

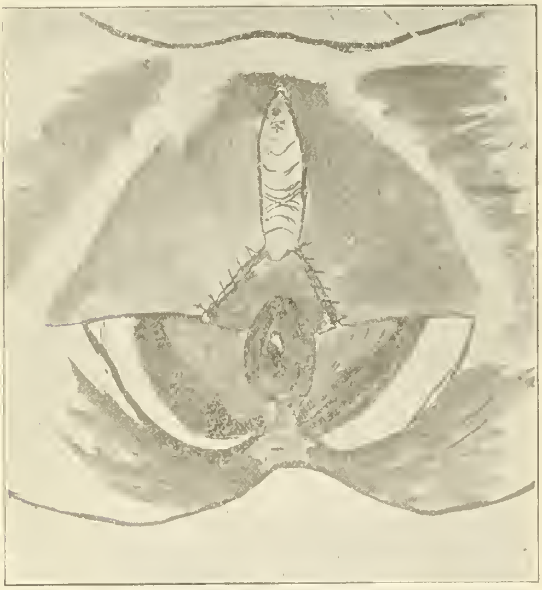

Diagram 7. The normal replacement of tissues in bilateral laceration of the pelvic floor.

The broken muscles retract in the direction of the long axis of their fibers and in time atrophy; the fascia in time draws away toward its bone attachments and scars over its torn edges.

The position of the rupture of the mucous membrane and fibrous coat of the vagina, even in lateral tears, is usually central and if unrepaired will scar centrally. The initial split being at the fourchet, it directly involves the fibrous coat beneath it which is an invagination of the superior layer of the triangular ligament. The tear not being able to effect the strong perineal center, it shears off laterally on one or both sides into the fascial floor.

The normal deep anal cleft, and tucked up anus drawn well forward, the short perineal space and the short closed vaginal orifice under these circumstances disappear and function is more or less deranged because of the loss of both stability and mobility as the pelvic floor no longer affords a fascial barrier to the descent of its contents or musculature to accentuate its closure.

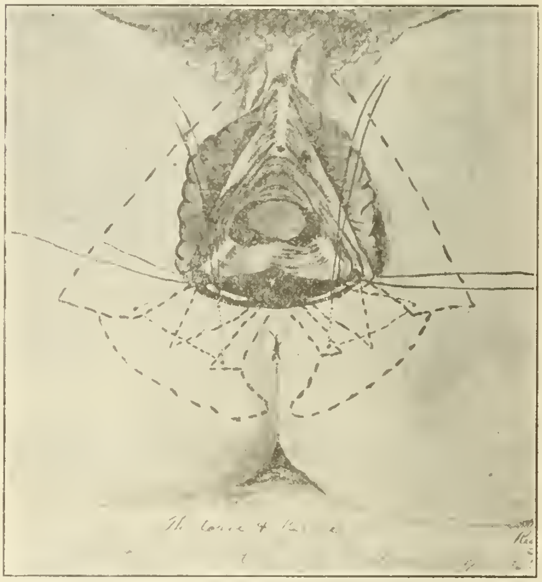

Diagram 8. Scheme of operation for the recovery of the torn structures of the pelvic floor and their reapproximation laterally where they were torn.

The operation which I find to be sufficient to cope with these conditions is as follows: (Let us consider the case of a complete bilateral tear.) The primary denudation is of the Hegar type, which discloses the widely gaping scar of the posterior vaginal wall. With a finger in the rectum and one on the denuded surface, the posterior fragment under the denudation is palpated and its position determined in front and toward the sides of the anus. An incision is made laterally on both sides through the base of the denudation, above the lateral borders of the palpated posterior fragment, and dissection is carried to the fragment. The tissues determined to be those wanted are picked up and are brought to view in the wound and are then freshened and fixed by a long suture. This being done on both sides we are ready for a trial proof of our contention. If traction is made on the two transfixing sutures in the direction of the urinary meatus it will be found that the perineal center can be drawn forward almost to the urinary meatus before the coccygeal tendon is tightened and the deep anal cleft is reproduced. .This is the position however at which it must be reapproximated to its lateral attachments to make a correct closure. Through the same lateral incisions, dissection is again, after retracting the edges of the wound, carried out toward the pubic ramus, to expose the anterolateral fragments which have retraced in that direction. These being found they can be proven to be the tissues wanted by making traction upon them. If they are the fascial structures they will be attached firmly to the bone and will not yield. To these on either side are to be attached the lateral margins of the posterior fragment as far forward as was previously determined as being necessary to normally relocate the structures. When this is done on both sides we note that at once the rectocele tumbles back into the pelvic cavity where it came from, the anal cleft is deepened because its apex is again hung at its normal altitude, and the anus again has an anterior anchorage and sets in close behind a shortened perineal space. The gaping of the vagina is already closed for two thirds of its width by this procedure and the Hegar denudation is now an anteroposterior sulcus. Deep stitches are used here to close in the fibrous base and a submucous stitch closes in the membrane.

Concerning the levator muscle, that is included if it can be recovered in the two or three stitches nearest the median line, while closing the fascia laterally.

A careful reapproximation of the lowest myrtiform caruncles while closing up the mucous membrane will reproduce a condition very much like that of the nulliparous woman. Thus having made this slight concession to cosmetics, you may be sure also that you have done good surgery.

Try minute doses of apomorphin to relieve the vomiting of pregnancy.

SURGERY OF THE SPINAL CORD.

BY J. S. RODMAN, M.D., F.A.C.S.,
Philadelphia.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

It is rather with a conviction that the surgery of the spinal cord has not been given the attention it deserves that I appear before you with a plea in its behalf. I do not mean to say that the few especially interested have not done much to further it within recent years, but that it is my impression that there still exists a feeling of pessimism in the minds of the majority of perhaps even the members of this society, which the facts do not warrant. So this, therefore, is my excuse in coming before you with a comparatively small group of cases from which to draw conclusions. After all, it is not so much my own experience, except in so far as it illustrates the original work of others, in which I hope to interest you.

Many pathological conditions of the spinal cord justify surgical intervention. Pressure from fracture dislocation of the vertebra, infused with renewed interest since Allen's careful work showed us how to relieve tension by a dorsal slit in the substance of the cord; gunshot or stab wounds; purulent meningitis; pressure from without, as caused by extramedullary tumors and cysts; from within, as caused by intramedullary tumors and syringomyelia; spastic paraplegia, and pain, especially the intolerable variety accompanying tabes.

It is manifestly impossible, and equally undesirable, to go into a detailed consideration of each of these several conditions at this time.

With regard to the technic of the approach to the cord, it has been my practice to perform a simple laminectomy, and I find my results improving as I learn to shorten the time required in operation. What formerly took one and a half hours to do, now takes about forty-five minutes, and thus minimizes shock. One must learn to handle the cord itself with the greatest delicacy, as its structure renders it peculiarly intolerant of trauma.

The removal of tumors, extra- and intramedullary, is, of course, a large part of spinal cord surgery. I know of no other location in which tumors grow where the same mathematical precision is possible in their diagnosis, for if certain areas of the cord are pressed upon, certain peripheral symptoms are bound to appear. One of my cases well illustrates this fact:—

C. F., male, forty-eight years, M. C. H., record No. 15,162, came to the hospital complaining of pain in back and legs, and weakness of legs. Referred to me by Dr. Weisenburg with diagnosis of intraspinal tumor at the level of the fourth lumbar vertebra. A laminectomy was done, March 7, 1911, the spines and laminæ of the third, fourth, and fifth lumbar vertebra removed, and an extradural fibrosarcoma was found at the level of the fourth lumbar vertebra and removed. This patient made a rapid and complete recovery and was well the last time I saw him, two and a half years after operation, having regained full use of his legs.

The removal of intradural, especially intramedullary tumors, is, of course, somewhat more difficult. As I have said, the greatest delicacy is necessary in handling the cord, lest you do more damage than that which you seek to repair. Elsberg has made a valuable suggestion, which is, that tumors in the cord substance itself should be removed by extrusion, in other words the tumor should be allowed to extrude itself from within the cord. This it will do if a longitudinal incision is made over it through the overlying cord substance. Disastrous results will follow any attempt to remove such a tumor by dissection. By using the method of extrusion a two-stage operation becomes necessary. Having performed the laminectomy, opened the dura, and made an incision over the tumor at the first stage, the muscles are brought together and the skin closed in the usual manner. At the second stage the tumor will be seen to have extruded itself, sometimes completely, from its bed within the cord. The following case well illustrates the method:—

C. J., male, forty-four years, complained of paralysis of legs, partial inhibition of urine and rectal control, pain in arms, back, chest and legs. Referred to me by Dr. Weisenburg with a diagnosis of intraspinal tumor at the level of the third or fourth dorsal vertebra. Laminectomy revealed swelling of the cord at the level mentioned, and an incision into the cord substance over the tumor was made. At the second stage a tumor, reddish brown in color, about the size of an almond, was seen to be protruding from the cord. It looked as if its removal could be successfully accomplished, until it became apparent that the tumor tissue extended into the cord substance above and below the point of extrusion. It, therefore, was only partially removed. This patient seemed to improve for a time, but after six weeks relapsed and gradually grew weaker until the time of his death, two and a half months after operation. Had the tumor been more localized and less infiltrating no doubt its extrusion would have been complete, as has been reported by Elsberg, Frazier and others. The pathological report in this case was gliosarcoma.

I will confess that on two occasions where tumor was suspected we have performed laminectomy and found none. In one of these cases there was a localized collection of fluid within the dura, which was drained with marked benefit to the patient. In the other there had evidently been a localized pachymeningitis with a thickened dura and adhesions from the pia to the cord. Improvement followed separation of these adhesions.

Resection of the posterior roots for both pain and spasticity is receiving, perhaps, more attention to-day than any other problem in spinal cord surgery. As early as 1888, Dana, of New York, suggested cutting the posterior roots to relieve the pain of ascending neuritis. Abbe performed the first operation of this kind in December of the same year. Since then the operation has been done many times.

Foerster, of Breslau, in a paper read before the Third Clinical Congress of Surgeons, May, 1913, collected forty-four cases in which the operation had been done to relieve pain. Of these ''six died of the immediate effects of the operation, and seven succumbed sooner or later to the progressing disease.''

I have performed laminectomy for the relief of pain in four cases.

The first was a man who suffered from metastatic carcinoma of the vertebra. He had severe root pains requiring morphin in large and frequently repeated doses. Laminectomy was performed, the third, fourth, fifth and sixth dorsal spines and laminæ removed, and the second, third, and fourth roots sectioned. The pain was very much relieved for a short time, but was quite as bad when he left the hospital five weeks after operation as it had been before.

This, no doubt, was due to the fact that not enough roots had been cut, and also to the progress of the disease.

In the second case, a man suffering from tabes, rhizotomy was done for lightening pains.

The patient was a man, fifty years old (M. C. H. 17,727) whose symptoms began with lightening pains in back, abdomen and legs about eight months previous to operation, which was performed March 9, 1912. He had a Charcot's joint at left knee and right shoulder, the *x*-ray also showing disease of the eleventh and twelfth dorsal vertebra. A laminectomy was done, the eleventh and twelfth dorsal vertebra found necrotic, and a thick, white, creamy purulent material exuded when the spines were removed. The spines and laminæ of the first and second lumbar were also removed. On opening the dura very little cerebrospinal fluid escaped, and the cord itself, at the level of the eleventh and twelfth dorsal vertebra was found to be softened, yellowish, and apparently partially necrotic. The first and second lumbar roots were cut on both sides. The patient reacted well, made a good postoperative recovery and was greatly relieved of pain. He left the hospital four weeks after operation, against advice. At that time his wound was not entirely healed, and two large bed sores had appeared, but he still had much less pain than before the operation.

These and two other cases, in whom pain was markedly relieved, fall into Group I., forty-four of which have been collected by Foerster. The relief of pain was sufficiently great to justify me in cheerfully undertaking the task again. Such cases, of course, are the worst possible surgical subjects, because of loss of bladder control with consequent cystitis and ascending kidney involvement, drug habits, pressure, sores, etc.

In three cases I have cut the posterior roots to relieve spasticity. In 1908 Foerster suggested the operation as a measure indicated in Little's disease. Time is lacking to go into the physiological reasoning underlying the clinical application, and, besides, this has been done fully by Foerster, Clark and Taylor, Frazier and others. Suffice it to say that by cutting the posterior roots the afferent sensory impulses from the periphery are blocked, which restores a balance upset because of diminished inhibition, from the cortex through the diseased pyramidal tracts.

Tables have been carefully worked out by Foerster showing what roots it is necessary to cut to relieve the spasticity of certain groups of muscles. It is no less essential to choose the subject. Too deficient mentality will certainly make a good result much less likely, since intelligent coöperation is necessary in the after treatment. Therefore not all cases of Little's disease are suitable, yet it is strange how markedly improved mentally my first patient was following rhizotomy. Other operators have remarked on such improvement before. It may be due to the increased ability to get about and thus to take a keener interest in life.

My first patient was a girl, aged sixteen years, upon whom I performed rhizotomy, November 22, 1912. (M.C.H 29,138) Her's was a typical case of Little's disease. The spines and laminæ of the tenth, eleventh and twelfth dorsal and the first lumbar vertebræ were removed. As had been decided upon previously, the first, third, and fifth lumbar roots were cut on the right, the second and fourth on the left. Following operation knee jerk was entirely absent on the right side. The left leg was still slightly spastic, but much less so than before the operation. I saw her one month ago. She can now walk well, and, although the left leg is still spastic, the right is entirely relieved.

Another patient, R. L., female, twenty-four years, (M.C.H. 21,381) suffering from spastic paraplegia, was operated on about the same time. The first, second, and third lumbar roots on both sides were sectioned. Knee jerks were abolished on both sides immediately after operation. After a somewhat stormy convalescence the patient made an operative recovery, but at the time she left the hospital, two months later, the spasticity had returned. I have heard, indirectly, that she is much improved as a permanent result, although I have not seen her since she left the hospital.

In one case, operated on at the Presbyterian Hospital, I decompressed the cord for spastic paraplegia. I could see no improvement following the operation.

I have had altogether seven cases of root resection, four for the relief of pain and three for the relief of spasticity. There has been no operative death. In all of those cases in which rhizotomy had been done for the relief of pain the desired result was accomplished for a time. In one of the three cases in which the operation was done for the relief of spasticity the result was brilliant, in one the immediate result was disappointing but the end result, I have heard, good, and in the other there has been no improvement.

I certainly shall not attempt to draw any conclusions whatsoever from this limited experience; however, the operation is comparatively new and equally infrequently done. It may not, therefore, be amiss to present these cases in a general way. My belief, taken from the literature and my own experience, is that rhizotomy to relieve pain is not only justifiable but highly desirable in suitable cases; that rhizotomy for the relief of spasticity is also justifiable, but that great care must be used in the selection of cases. They must, at least, be ones for whom less drastic measures, such as tenotomies, peripheral nerve resections (Stoffel's operation) and exercises have either been tried, or seem to offer nothing, and in the case of Little's disease there must be sufficient intelligence to follow up the operation with a persistent course of suitable exercises.

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DISCUSSION.

Dr. Charles H. Frazier, Philadelphia: Dr. Rodman has presented to you the possibilities and the scope of spinal surgery, and he is to be congratulated upon the results of his own experience, and in opening this discussion I should like to emphasize by repetition the plea which he has made for more frequent resort to laminectomies for diagnosis and treatment. In this connection, I was very much impressed by the radical attitude taken by members of the American Neurological Association, who in their deliberations at the last annual meeting spoke of the many difficulties and obstacles that beset an accurate diagnosis in spinal cord lesions, and urged more frequent recourse to exploratory operation.

The dread of opening the dural sac of the spinal cord curiously enough has outlived in the minds of physicians the dread of entering the cerebral cavity. But as a matter of fact, the risks incident to a laminectomy *per se* are no greater than those of an exploratory laparotomy. In looking over the records of my own experience, which now covers a number of years, I find there have been only three operative deaths in all sorts of lesions and conditions of the patients. I attribute the freedom from shock and fatalities to two factors—selective anesthesia, which in these cases is the intratracheal method, and the application of stovain to the cord or roots immediately above the site of manipulation. There is not the slightest doubt in my mind that stovain thus used has a positive and potent prophylactic action against shock by preventing the serious consequences that would otherwise arise from handling the cord and more particularly the roots.

In cases where the lesion is so high as to affect all the accessary muscles of respiration, I have found it quite possible to perform the operation from beginning to end under local anesthesia, thus avoiding the danger of ether pneumonia.

Tumors of the cord, fortunately, are operable in a very much larger proportion than tumors of the brain. Of a collection of 272 cases of tumors arising either in the meninges or the cord in which an operation has been performed, 36 or 13.2 per cent. have been intramedullary. The endothelioma or fibrosarcoma, one of the most common types, is encapsulated, easily removed, and not apt to recur. I have never, however, felt very enthusiastic over the extrusion method of dealing with the soft intramedullary growths, usually gliomata. No doubt they are in part extruded from the substance of the cord, but from their infiltrating character, they are of necessity inoperable, surgically speaking, in that they can not be radically removed. Rothmann in his recent monograph on intramedullary surgery gives a very excellent survey of what has been accomplished in this field, and by carefully relating the facts concerning the functions of the various columns and fibers of the cord which have been gleaned from the physiological investigations of himself and others, points out the limitations and the possibilities of intramedullary surgery in the future. Whether or not these intramedullary tumors may respond to radium therapy applied at the time of operation and subsequently is still undetermined, but plans have already been laid in my clinic for such a test.

Time will not permit of my discussing the question of decompression in the treatment of circumscribed meningitis, etc., but in closing I should like to say a few words about resection of the roots. I fancy that every one who has performed this operation any number of times has been discouraged at the incomplete or partial relief in some instances. This has been my experience as well, and Dr. Rodman has frankly told you of his own. But I feel that these instances of partial relief are not because the principle of the operation is not well founded, but because not enough roots have been cut. To that I take it must be attributed our failures, and this applies to section of the posterior roots for the relief of spasticity or pain. In the latter case, it has been suggested by Kidd that the failure of relief may be due to the presence of sensory fibers in the ventral roots. And again, Küttner has advocated a double vagotomy or a section of the vagus root near the medulla. We have not as yet, however, any firm physiological basis for either of these assumptions. Thus in the agonizing cases of gastric crises resisting all other forms of treatment, root cutting is not only justifiable but almost imperative. So too in inoperable carcinoma of the spine, I have seen the most welcome relief follow root section. The same is true of spasticity;

the splendid results exhibited by Förster are sufficient evidence of the efficacy of this form of treatment. We should be most particular to select for the operation only those cases which have a sufficient residium of muscular power in the extremities, and who have the intellect to make it possible to apply educational exercises as part of the after treatment. Very excellent results have been reported from Stoffel's selective resection of fibers of the peripheral nerve causing the spasticity, but as yet not sufficient time has elapsed for us to prognosticate as to the future of this procedure.

Dr. Ernest Laplace, Philadelphia: The largest field for spinal surgery is probably exploratory operation for decompression of the cord in traumatism to the spine, so as to prevent the deposit of fibrin and formation of fibrous tissue within the cord, resulting in the so-called railroad spine. X-ray pictures should be used on every case to guide us. In tabetic pains resection of the posterior roots often fails in giving relief because the disease is progressive in the cord, and other centers are affected, after the operation. Hence cases should be sent to the surgeon in the incipiency of tabes, for section of posterior roots, knowing what the future has in store for the patient.

THE TREATMENT OF FIBROMYOMATA UTERI: WHETHER SURGERY OR RADIOTHERAPY.

BY STEPHEN E. TRACY, M.D.,
Philadelphia.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

We have recently heard so much concerning the treatment of fibromyomata uteri by the *x*-rays, that it seem advisable to present this subject for discussion in order to obtain the opinion of the members of this society, as to whether all tumors, which produce symptoms, should be removed by surgery or whether they should be treated by radiotherapy; and, if either treatment is not applicable to all cases, then to determine which cases should be treated by the different methods.

The most ardent advocates of radiotherapy claim that all fibromyomata uteri, except those removable by myomectomy, should be treated by the *x*-rays. Others state that the *x*-rays should not be employed in the treatment of these tumors in women under the age of forty years, in fibromyomata associated with malignancy of the uterus or appendages, nor in tumors undergoing necrosis or other forms of degeneration. If the roentgenologist can determine in every case when malignancy is present, or when the tumor is undergoing degenerative changes, he is to be congratulated, as the surgeon is frequently not able to diagnose these conditions until after the tumor has been removed, in many cases not until after an histological examination has been made, and in some cases not until the patient returns with a malignancy. Many roentgenologists, however, will not treat a case except in conjunction with a surgeon.

The radiotherapy enthusiast, if he be at all familiar with the life history of these neoplasms, must know that a certain percentage of these tumors undergo various forms of degeneration in which the application of the *x*-rays will not be beneficial, but, on the other hand, may hasten the degenerative process; that a certain percentage of fibromyomata are complicated by a malignancy in the reproductive organs, and that in other cases ovarian cysts and inflammatory disease of the appendages coexist, conditions for which *x*-ray treatment is absolutely worthless.

In a series of 3561 cases operated on, collected about six years ago, associated malignancy, degenerative changes in the uterus and tumor, and lesions of the appendages in which there was not the most remote hope of a cure from roentgenotherapy were found as follows:—

DEGENERATIONS AND CHANGES IN THE TUMOR AND UTERUS.

Carcinoma corporis uteri	63	(1.7%)
Carcinoma cervicis uteri	25	(.7%)
Sarcoma	54	(1.5%)
Chorioepithelioma	2	
Necrosis of tumor	197	(5.5%)
Myxomatous degeneration	160	(4.4%)
Total	501	(14%)

CONDITIONS ARISING IN THE OVARIES.

Ovarian cyst, unilateral	244
Ovarian cyst, unilateral, intraligamentous	3
Ovarian cyst, bilateral	24
Ovarian cyst, bilateral. intraligamentous	1
Ovarian cyst, bilateral, suppurating on one side	1
Ovarian cyst, suppurating	8
Ovarian cyst, twisted pedicle, intracystic hemorrhage	1
Ovarian cyst, with hydrosalpinx	1
Dermoid cyst	23

Dermoid cyst, suppurating	4
Dermoid cyst, twisted pedicle	3
Dermoid cyst, bilateral; umbilical hernia	1
Dermoid cyst, with multinodular cyst	1
Dermoid cyst, with hydrosalpinx	1
Ovarian fibrosarcoma	3
Ovarian carcinoma	10
Ovarian carcinoma, papillary, bilateral	1
Ovarian papilloma, unilateral	1
Ovarian papilloma, bilateral	1
Ovarian sarcoma	1
Ovarian abscess, unilateral	14
Ovarian abscess, bilateral	2
Parovarian cyst	23
Total	377 (10.5%)

CONDITIONS ARISING IN UTERINE LIGAMENTS.

Cyst of broad ligament	6
Abscess of broad ligament	2
Total	8

CONDITIONS ARISING IN THE FALLOPIAN TUBES.

Gestation, ectopic	9
Gestation, ectopic, salpingitis, and hydrosalpinx	1
Hydrosalpinx, unilateral	127
Hydrosalpinx, bilateral	19
Hydrosalpinx, and tuboövarian abscess	1
Pyosalpinx, unilateral	73
Pyosalpinx, bilateral	46
Pyosalpinx with ovarian abscess	9
Pyosalpinx twisted upon itself	1
Pyosalpinx with tuboövarian abscess	2
Salpingitis and pyosalpinx	7
Salpingitis and tuboövarian abscess	3
Tuboövarian abscess	5
Total	303 (8.5%)

This gives a grand total of 1189, or 33.38 per cent. of the cases in which the patients could not have been cured by *x*-ray treatment.

Of the degenerations and changes in the tumor and uterus there were 501, or 14 per cent., of the cases in which the lives of the patients would undoubtedly, sooner, or later, have been sacrificed had they been treated only by roentgenotherapy. A certain number of the tumors in which cystic (3.5 per cent.) and hyaline (1.8 per cent.) degenerations were present would have broken down under roentgen treatment, which would, conservatively stated, have increased the number to 15 or 16 per cent. If we add to these 501 cases, 405 cases of ovarian cyst, cyst and abscess of the broad ligament, tuboövarian abscess, ectopic gestation, not mentioning pyosalpinx, we have a total of 906, or 25.4 per cent., of the cases in which the lives of the patients would have been lost if they had been relegated to the roentgenologist.

It is well recognized that the most serious complication of fibromyomata uteri is malignancy. In a series of 3561 cases the condition was present in 4 per cent. of the cases. In 337 cases of fibromyomata uteri on which he operated, Noble found malignancy in 17, or 5 per cent., of the cases. In the last 100 cases he reported, malignancy was found in 8 per cent. Bland-Sutton states that malignancy in the corpus uteri will be found in over 10 per cent. of the cases in women over the age of fifty years who submit to operation. In a series of 500 consecutive cases submitted to operation he found there were sixty-three women who had attained the age of fifty years and upwards, among whom there were eight, or 12.7 per cent., who had cancer of the corporeal endometrium as well as fibroids. Samuel H. Geist, in a series of 250 cases of uterine and cervical myomata, found that 12, or 4.8 per cent. showed sarcomatous changes. Winter believes that if myomata were examined systematically sarcoma would be found in about 4 per cent. of all cases. Kelly and Cullen, in a series of 1674 cases examined found malignancy as follows: Carcinoma of corpus uteri 25, carcinoma cervicis uteri 18, and sarcoma 17, a total of 60, or 3.7 per cent. of the cases. In 700 specimens studied by McDonald, malignancy was found in 35, or 5 per cent. of the cases. Freund, in 500 myoma cases found carcinoma in the uterus or ovary in 6 per cent. of the cases; Kline, in 491 cases found malignancy in 7.7 per cent.; and Mackenrodt, in 418 cases found malignancy in 7.7 per cent. In a series of 79 cases on which I have operated there were carcinoma of the corpus uteri 5, carcinoma cervicis uteri 1, sarcomatous change in the tumor 1, malignant cyst of the ovary with secondary involvency of the uterus 1, a total of 8, or 10 per cent. Besides these there were two cases in which the pathologists could not agree, and they were excluded. Time will probably settle the dispute. In view of these figures it can be conservatively stated that malignancy will be found in from four to five per cent. of all cases coming to operation.

It is well known that the percentage of cases of cancer is increasing, therefore, we can expect to find the condition associated with fibromyomata uteri in a larger percentage of cases as time goes on.

In view of the statements by some roentgenologists that the *x*-rays should be used in the treatment of fibromyomata uteri only in women past the age of forty years, it is important that we investigate the age at which the various changes and degenerations take place in these tumors.

In a paper published in 1908, I showed that the age at which the degenerations took place in a series of 506 cases varied from twenty-three years to sixty-eight years. Of 114 cases in which degeneration took place 74, or 64.9 per cent., occurred after the age of forty years. In a series of 693 cases including my own and those taken from the report of the Kensington Hospital for Women from 1893 to 1909 inclusive and from the papers of Cullingworth and Scharleib, in which the age of the patient was given, the degenerations took place, divided into decennial periods, as in the accompanying table.

	Under 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Total.
Myxomatous degeneration		6	4				10
Necrosis of tumor	2	19	25	8	3		57
Cystic degeneration	1	5	6	1	3		16
Sarcoma		1	4	4	2		11
Edema of tumor	2	11	12	5			30
Carcinoma corporis uteri			2	5	2	1	10
Calcareous infiltration		1	2	3	4		10
Carcinoma cervicis uteri		1	3	1			5
Hyaline degeneration	3	6	23	2			34
Hyaline degeneration and necrosis				1			1
Hyaline degeneration and edema			1				1
Myxomatous degeneration and calcareous infiltration			1				1
Calcareous infiltration and necrosis		1					1
Fatty degeneration			1				1
Inflammation		1					1
Carcinoma					1		1
Necrotic carcinoma			1				1
Malignant change			1				1
Adenocarcinomatous degeneration		1					1
Epithelial degeneration					1		1
Necrotic or sarcomatous degeneration				1			1
Calcareous infiltration, necrosis, adenocarcinoma of fundus				1			1

The age at which the degeneration took place in a series of 693 cases varied from twenty-three years to seventy-two years. Of 196 cases in which degeneration took place 136, or 69 per cent., occurred after the age of forty years. Of 26 cases of malignancy 24, or 90.3 per cent., took place in women who attained the age of forty years and upward.

Thus far we have considered the degenerations and changes which take place in the tumor; the age at which these occur, the associated malignancy, and the pathological conditions which coëxist. Therefore, it would seem that before we can intelligently take up the treatment it is necessary to consider the operative mortality.

There have been several series of over one hundred operations with one death and a few have reported as many cases with no deaths. Such reports, probably always mean that the surgeon began the count immediately after a death and continued until the next fatality, or included one death and counted to and included the last case before the second death. If the death immediately preceding and following these series were included the mortality rate would be two per cent. or three per cent. Therefore, I believe the mortality among skilled surgeons is between two and three per cent., and for all cases by many operators at least five per cent.

In my own series of 79 cases,[1] there were two deaths, one due to a double pneumonia, probably resulting from a "fresh air nurse" allowing the cold winter air to blow over a frail, weak patient. The second occurred in a patient with a fibromyomata uteri associated with a carcinoma of the corpus uteri, who developed renal insufficiency and died of uremia the fifty-second day after operation. The patient could have been sent home as far as the operation was concerned, but it was felt that, as her home surroundings were meager, she would have a better chance to regain her health under medical treatment in the hospital, and was not discharged. As she died in the institution the fatality is included in the series.

The roentgenologists claim that the patient is not incapacitated and that her life is not endangered by the *x*-ray treatment. It might be stated in this connection, that the time required to relieve a patient by roentgenotherapy is more than sufficient for her to recover from an operation, and after recovery from the operation all doubt about the disappearance of the tumor has been eliminated. There have been several cases reported in which the bleeding has been increased by the treatment. Panner and Kjaergaard believe that uterine hemorrhage can be cured with the roentgen rays when the ovaries are responsible for the bleeding. Mackenrodt thinks that ninety-five per cent. of fibromyomata uteri treated by the

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[1] Since this paper was written eight cases have been subjected to operation, making eighty-seven cases with two deaths.

x-rays will ultimately require operative treatment. In some cases operative treatment has been rendered more difficult because peritoneal adhesions have been caused by the *x*-rays (Kisminski). As to whether the cases associated with malignancy should be treated by the *x*-rays and radium, it would seem that to treat such a condition in a patient on whom a radical operation could be performed would be the height of folly with our present knowledge of radium, as there is no proof that a single case of deep-seated carcinoma has been cured, applying, of course, the same test as to our surgical cases, the five-year period, and it is well known that *x*-ray treatment for malignant disease of the female pelvic organs has been practically worthless. Sellheim had a case of myoma in which preliminary curetting showed the uterus to be free from cancer, and malignant disease of the corpus developed during the course of the roentgen treatment. Pranque and Runge each had a case which developed carcinoma of cervix while under treatment. A current comment in a recent issue of the *Journal of the American Medical Association* stated, "We have, then, a considerable experience on which to base our estimate of the usefulness of radium therapy, and from this experience there is no justification for the promise of relief in extensive cancer from the use of radium, or for the hope that with large quantities of radium we would be much nearer the solution of the problem of the cure of cancer in general than we are now. Radium has a useful therapeutic field, and it would be unfortunate for its therapeutic reputation to be damaged by exaggeration or injudicious enthusiasm." H. Keitler, in discussing carcinoma, states that radium and mesothorium should be regarded as nothing more than palliative measure, as no one can guarantee a radical cure by radium. Rovsing believes from his experience, that radium promotes instead of checking cancer.

That the life of the patient is not immediately endangered by *x*-ray treatment is no doubt true, but we have shown that over twenty-five per cent. of the patients would perish of the degenerations, associated malignancy, and pathological conditions which coëxist if the *x*-rays only were used as a routine treatment. We have no proof that radium will cure a deep-seated malignancy; therefore, it is evident that radiotherapy should not be used in the treatment of all cases of fibromyomata uteri.

It would seem that roentgenotherapy should be limited to the treatment of these tumors as follows: (*a*) In a patient whose general health is so much below par, from any cause, that she could not withstand the shock of an operation; (*b*) in cases of marked anemia to temporarily control bleeding until the patient is sufficiently restored to health to undergo an operation, and (*c*) in a patient who continues to bleed after a myomectomy, and an histological examination of the tumor and endometrium shows no evidence of a malignancy.

When we consider that over thirty-three per cent. of patients with fibromyomata uteri could not be cured by roentgenotherapy, that over twenty-five per cent. would sooner or later perish under such treatment, that the tumor can be removed by skilled surgeons with a mortality of less than three per cent., it would seem that the only rational treatment for these tumors, which produce symptoms, with the few exceptions given, is early surgical intervention.

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DISCUSSION.

Dr. Wilmer Krusen, Philadelphia: Accuracy of diagnosis is desirable but difficult. We can not always determine when degenerative changes have occurred or when disease of the tubes, ovaries, appendix, or intestines is present. In view of the fact that the mortality in the hands of trained surgeons is so low we have no hesitation in recommending surgery as the better method of insuring a permanent cure. The delay caused by utilizing the palliative methods may turn the tide against the patient when ultimately surgery becomes necessary. I have recently operated upon the wife of a physician upon whom the *x*-ray had been used for six months, the patient bleeding, which made her a greater operative risk. I believe we are still unconvinced that the *x*-ray or radium is superior to clean surgery except when some positive contraindication for hysterectomy exists.

DR. GEORGE ERETY SHOEMAKER, Philadelphia: The rays are expected to control but one of the many complications of fibromas, namely hemorrhage; whereas future dangers remain from the others. The *x*-ray influences the tumors through the ovaries. The removal of ovaries for fibroma was abandoned long ago as ineffective for complications. It is probable that in time the ray treatment will assume the same place; while surgery will remove the original disease permanently and at the same time all complications.

DR. TRACY, closing: I regret that some of our radiotherapy friends are not present to give us their side of the question. Dr. Krusen has mentioned the difficulty of making an accurate diagnosis in regard to the degeneration in the tumor and uterus. This is a most important point. It is not always possible to diagnose these conditions even after the specimen has been removed, and occasionally not until the patient returns with a malignancy. The more carefully these tumors are studied the more the malignancies reported. Some have questioned the pathological reports in my case but while malignancy was well advanced in these cases and the patients have nearly all died from a recurrence there is no doubt about the correctness of the histological diagnosis.

Aided by a grant from the Council on Pharmacy and Chemistry, Dr. L. H. Newburgh has made a painstaking study of the action of strychnin and caffein on cardiovascular disturbances. He concludes that, since blood pressure is not low either in persons showing grave symptoms of pneumonia or of those dying from that disease, and since it has been proved that the vasomotor arcs are normal in animals after death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia. Strychnin does not improve or augment the work of the heart in persons suffering from broken cardiac compensation. It could not be shown that either strychnin or caffein stimulated the cardiovascular apparatus in any conditions studied.—*Jour. A. M. A.*, July 25, 1914, p. 311.

SOME UNUSUAL FORMS OF CONGENITAL CATARACT WITH REMARKS ON THEIR MANAGEMENT.

BY WILLIAM CAMPBELL POSEY, M.D.,
Philadelphia.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Ordinarily congenital cataract presents but few difficulties either in diagnosis or treatment, the opacity blocking the pupil being generally apparent at a glance, and its nature readily determined by the usual ophthalmological tests. Discission of the lens, either single or repeated, suffices to clear the pupil and more or less satisfactory vision is obtained after the adjustment of the proper lenses. The only mooted points in connection with such cases are the age at which the operation should be undertaken and the manner of operating, for ophthalmologists vary widely in their practice in these two respects, some advising the removal of the lens when the child is but a few months old, others deferring surgical interference until two years or more have been attained. Some aim at the rapid absorption of the lens by an active discission followed a few days later by the removal of the swollen mass of lens matter by the curet, while others adopt a more conservative course, and extend their series of cautious needlings over a period of several months.

In the judgment of the writer, the age at which the operation should be undertaken depends largely upon the extent of the opacification of the lens and the degree of vision, for while he considers it desirable to remove the opacity as early as possible in eyes that are blind or in which the vision is very much reduced, on account of the danger of the mental development of the child being retarded from lack of sight, he makes it an invariable rule not to operate until the child is ten months old, for at an earlier age the structures comprising the anterior segment of the eye are so small and so little developed, that it is scarcely practicable to perform the necessary instrumentation. Moreover, it has been asserted that the amount of aqueous humor in a younger child is insufficient to procure the solution of the liberated lens substance. The writer, however, would insist that operation should not be deferred later than ten months in such cases, for, while it is true that the mentality of many infants with congenital cataracts is permanently deficient and the lenticular opacities coëxist with other stigmata of degeneration, he has seen improvement of vision stimulate the mentality in too many cases not to consider its betterment in all instances at as early an age as possible.

In all cases, however, in which the opacification is not complete and vision is fairly good, it is well to postpone operating until even three or four years have been attained, for the longer the surgeon waits the more the eye develops and the more apparent does the exact nature of the lenticular opacity become, and the dressing and bandaging of the eye is easier and there is less danger of infection.

As to the manner and technic of clearing the pupil, extreme conservatism should be followed. and cautious and repeated needlings on one eye at a time should be preferred to the more rapid and dangerous removal of the lens substance in mass.

What has just been said refers to the majority of cases of congenital cataracts and includes the usual zonular varieties and the rarer forms of total opacification of the lens. There are, however, other varieties which baffle the surgeon, both as to their exact nature and the manner of their removal. Several cases of this nature have recently been encountered by the writer and they are brought to the attention of the section in the hope that the recital of the difficulties which were met with in their treatment may aid others in their conduct of similar cases. One of these, recently reported before the Wills Hospital Society, consisted of binocular total cataracts in an otherwise healthy infant of ten months. The cataracts presented nothing unusual, the capsules appearing no thicker than usual and there being no discernible evidence of other anomaly in the anterior segment of the eye than the cataractous lenses. An attempt at needling, however, was frustrated by the tenacity and density of the lens capsule. A clear pupil was ultimately attained by removal of a fragment of the lens capsule with capsule forceps, and by division of the iritic membrane blocking the pupil by iridotomy. Two somewhat similar cases have been met with at the Children's Hospital, but in both of these the density of the capsule was apparent upon inspection. One was removed *in toto* by the capsule forceps after linear section; the other succumbed to repeated needlings.

Another case of malformed lenses and irides in a microphthalmic subject, four years of age, was reported by the writer before the Section in Ophthalmology of the College of Physicians of Philadelphia in December, 1909.

Examination showed both eyes to be markedly microphthalmic. The anterior chambers were extremely shallow and the iris in each eye was arched forward, its base being indrawn and on a decidedly lower plane than the pupillary portion. Under high magnifying power, each iris appeared rudimentary, the minor circle being wanting, while the major was fairly well developed. The pupils were extremely small, being but two millimeters in size, and their size was but little influenced by exposure to different degrees of illumination. Both irides reacted, however, to light stimuli. Each pupil emitted a gray reflex. It was noted that the iris in both eyes appeared more bulging on the nasal than the temporal side, as though the lens mass behind was dislocated nasally. Atropin was instilled, when it was possible by the slight dilatation which followed to ascertain that the anterior capsule of the lens was slightly hazed, and that there appeared to be a denser zone of opacity more posteriorly. On testing vision, it was ascertained that the child could see with either eye to pick up pieces of white paper five millimeters in size from the floor without difficulty, but on account of diffidence her distant vision could not be ascertained.

By reason of the lack of pigment in the iris, the shallow chamber and the arching forward of the iris, both eyes closely resembled those of a young rabbit.

Thinking that the opacity of the lens might be only central and that the periphery might be clear, an iridectomy was thought of for visual purposes, and an attempt was accordingly made upon the right eye in the upper nasal quadrant. After the anterior chamber had been opened by the keratome, however, and the iris grasped with the forceps, it was found that the membrane appeared to be adherent to the sublying capsule, and as either clear lens matter or vitreous began to present, the attempt at iridectomy was abandoned and the eye bandaged. Unfortunately, a few days after this the patient was taken ill with measles and was transferred from the Children's Hospital, to which she had been admitted for the operation, to the Municipal Hospital, where the febrile disturbance from which she suffered and the indifferent treatment which the eye received, permitted the development of a uveitis, which persisted for nearly six months after the operation. Good vision was never attained, for though the eye operated on has remained quiescent, the cornea is densely hazed in the pupillary area and the iris is adherent anteriorly.

The ocular complications in this case are probably instances of lack in development in some of the structures of the anterior segment, as a consequence of microphthalmus, the iris in each eye being more or less rudimentary. In all probability there has been some obstruction offered to the disappearance of the vascular tunic of the lens and perhaps of the hyaloid artery as well.

In his classic address before the Section on Ophthalmology of the American Medical Association in 1908, Treacher Collins proved that the tough resistent membranes met with in congenital cataracts are frequently due to a malformation of the anterior part of the vitreous, and stated that in some instances he had obtained satisfactory operative results by the displacement downwards of the opaque tissue. He advised, however, an attempt at needling in the usual manner in even these cases, for the discission serves as an exploratory procedure, enabling the operator to judge of the constituency of the tissue with which he has to deal and at the same time exposes whatever lens matter may be present to the solvent action of the aqueous humor. Displacement should be resorted to only when the needling fails and a tough resistent substance still blocks the pupillary area. The writer is inclined to believe that this is better and certainly a less dangerous procedure than attempting to remove the lenticular mass with capsule forceps or by excision with iris knife scissors, and would recommend its adoption. He also agrees with Mr. Collins that in cases in which the pupil is small and does not dilate well with atropin, it is best to commence with an iridectomy. The chances of obtaining useful vision in these unusual forms of cataract are always dubious and the surgeon should give his prognosis accordingly, remembering that not all infantile lenticular opacities may be rendered solvent and clear pupils attained by simple or even repeated discissions.

DISCUSSION.

Dr. Edward Stieren, Pittsburgh: Dr. Posey's clear presentation of this subject serves exceedingly well to illustrate that which we all come to realize after working in the realm of ophthalmology for a while, namely that congenital cataracts may appear in varied forms and that the belief we may have entertained early in our experience that all congenital cataracts are soft opaque lenses, requiring only laceration of the anterior capsule to have them absorb promptly in the aqueous, is far from being true.

I shall speak briefly only on a few difficulties I have encountered in the management of congenital cataracts. I have had several times to contend with infantile lenses in which there was an opaque, tough anterior capsule which could not be lacerated with the knife needle without using force enough to dislocate the lens. With a fully dilated pupil a circular incision was made in one case around the periphery of the lens and where the capsule was not so dense and, after the lens matter was absorbed, the opaque central capsule was displaced downward out of the natural pupillary area with the aid of two needles. In another case full dilatation of the pupil could not be secured with atropin and in this case an iridectomy was performed and the upper third of the circumference of the anterior capsule was incised with the narrow Graefe knife used in the corneal section. After the lens matter was absorbed, the central capsular opacity was treated as in the previous case.

The problem of dealing with a dislocated congenital cataract must always be a delicate one, a statement with which Dr. Weisser, if he is present, will no doubt agree.

Several years ago in a Juvenile Court case I examined a girl, both of whose lenses were opaque and dislocated. She was sent to Dr. Weisser's clinic for religious reasons and the right, less dislocated lens was selected for needling. It promptly fell back into the vitreous with only the slightest pressure from the needle. A low grade uveitis developed and the eye has gone into phthisis bulbi.

A dislocated lens if it is to be needled should first be fixed and I believe the method of Fuchs, who fixes from behind, entering his fixation needle through the sclera, to be the safest one.

The age at which we should elect to operate is an important point. The essayist prefers ten months and with this I am heartily in accord. Surely not later than eighteen months. Ten or twelve years years ago I operated upon a six-year old boy with double congenital cataracts with quite satisfactory results. But when glasses were put on he had to be entirely reëducated in regard to the size of objects he had learned to identify by the sense of touch,—everything seemed so much larger when seen. For instance, an ordinary butter shell or dish less than three inches in diameter when first seen by him was thought to be a dinner plate.

The patient shown by me yesterday illustrates a type of congenital cataract, the management of which is always a problem. Briefly reviewed the man is forty years of age with double "coralliform" central cataracts, the clear lens about the periphery and between the tubelike radiating opacities containing highly refractive crystals. His vision in the better eye is 6/32 improved to 6/20, with a dilated pupil and 1 D.S. Obviously needling such a lens is out of the question and the best method of extraction must be decided upon.

In closing my remarks I wish to relate an unusual experience, six years ago, with a child whose right lens I needled at ten months of age. This was a case in which the pupil would not dilate fully with atropin and as the anterior capsule apparently was not opaque a limited incision was made, followed by slow absorption of the lens. It resulted in a dense capsular cataract afterwards through which a central opening was finally secured. When two and a half years old the child developed a nuclear opacity of the left lens and in a year the entire lens was diffusely cloudy. No constitutional cause could be attributed to the formation of the cataract. This spring I needled the left lens which was followed by entire absorption of the lens matter with a good black pupil and 6/6 vision corrected.

Dr. Howard F. Hansell, Philadelphia: I would not hesitate to recommend operation in the healthy child at any time after it has reached three months of age, provided the opacification of the lenses was sufficiently dense and large to cause serious diminution of vision. The operation of needling is followed by complication only when the nucleus and posterior layers of the lens are disturbed. Laceration of the anterior capsule and anterior fibers only is not in any sense a dangerous operation. I advocate its early performance because the lens absorbs more rapidly and coördination of the visual axes is more readily acquired. To wait several years is open to two objections; namely, the congenitally opaque lamellæ are transformed into dense nonabsorbable tissues, and sensitive and conducting fibers of the retina and optic nerve are less disposed to gain normal function.

Dr. Posey, closing: While in some instances operations performed on infants as young as two or three months are entirely successful, they are, in my opinion, less likely to be so, on account of the reasons I have given and I would advise waiting until ten months or even a greater age has been attained. In the cases referred to by Dr. Stieren, of dislocated cataractous lenses, I believe attempts at removal of such lenses should only be undertaken when the vision is too low to be useful. I have removed such lenses successfully with the loop, but in one instance saw uveitis develop later, in consequence of a detached retina. In reference to cases of congenital cataracts in individuals between fifteen and twenty years of age or even older, I would advise not attempting operation in such cases unless the vision were lower than 5/15 or 5/20.

IMPORTANCE OF THE EARLY RECOGNITION OF INVASION OF THE NERVOUS SYSTEM.

BY WILLIAM K. WALKER, M.D.,
Professor of Psychiatry, School of Medicine, University of Pittsburgh, Pittsburgh.

(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Nonne writes, "A knowledge of this chapter of internal medicine is of great importance to every physician. The prophylaxis and therapy open up a wide field, where, on the other hand, a failure to recognize the specific nature of a disease brings with it far-reaching and disastrous results."

The individual who is damaged in his highest directing and coördinating mechanism is hampered in efficiency. Depending upon the degree of involvement he is crippled or helpless, an encumbering weight upon family or the body politic, and frequently a menace to the safety of society. In almshouses, in homes for the incurable, in hospitals, and insane asylums we find such cases in abundance. Many of these exhibit the late results of syphilis of the nervous system, with clinical manifestations so plainly marked that there is no difficulty in joining what we see upon earlier acting cause.

To the neurologist and psychiatrist are presented earlier phases of this disease, long harbored in the bodies of apparently vigorous and capable men. The general practitioner sees many obscured or weakened cases which seem to be without obvious cause until in the laboratory, perhaps, are discovered evidences, in blood or spinal fluid, of well-advanced alterations among the lipoid constituents of vital organs, which may be either the precursors or accompaniments of deeply hidden destructive changes in nerve cells.

In addition to these measurable degrees of involvement there are cases in which the symptoms have not been sufficiently severe to lead the patient to seek medical advice, so-called latent or occult syphilis, with lines of demarcation so faintly marked that they escape our finest measurements, but whose children's children, defective in body and dulled in mind, bear witness to the ever-present tendency of the infecting organism, once it enters the blood stream, to invade the deeper recesses of the body, there to become intrenched and insidiously work its further havoc.

"Brain syphilis is a serious organic disease, which frequently causes death, often leads to a chronic state, but also in not a small number of cases may end in recovery. . . . The spinal cord is in general less often affected by syphilis than the brain. This may be explained by the fact that the most powerful factors in the etiology of diseases of the nervous system, such as heredity, trauma, infection, intoxication, as well as psychic and intellectual lesions in their fullest sense, involve the brain more frequently than the spinal cord. . . . The combination of brain and spinal lues is by far the most frequent . . . Extensive specific changes in the brain may remain latent during life, while on the other hand latent syphilis of the spinal cord may exist with well-developed brain lues. Not infrequently within the first year of infection, sometimes indeed within the first few months, syphilis can cause organic disease of the nervous system. . . . Brain lues can develop in any stage of syphilis, and the tertiary stage is by no means the favorite one."[1]

Different pathologic processes are present in the same patient, giving rise to widely varying clinical pictures. The processes, which consist of arteritis, gummata, meningo-myelitis, and in combinations of these, constitute cerebrospinal syphilis, tabes and paresis. They are processes and end-phases having origin in infection by the *Spirochaeta pallida.* It is only recently, however, that investigations have revealed certain accompaniments of these processes, which not only emphasize this etiologic connection but also supply us with important data pertinent to proper therapy. The Wassermann test upon the blood, and the Wassermann and Noguchi tests upon the spinal fluid, have supplied connecting links indissolubly binding early cause, the spirochete, to remote results manifested through the central nervous system. Tracing these connections and consequences, which heretofore have not been demonstrable, we begin to have clearer conceptions of the underlying pathology of a disease which consists, not of the positive serology in which we are now enabled to visualize it, but of ravages, early or late, mild or severe, of luetic toxins in the circulating fluids, of blood changes, with alterations in the structure of blood vessel walls, and with varying degrees of involvement of the meningeal coverings and the cells and glial structures of the central nervous system.

The terms metasyphilitic (Möbius) and parasyphilitic (Fournier) have long stood as artificial barriers between direct syphilis and indirect. But with the crowning achievement of Noguchi, namely, the discovery of the active live element, the spirochetes deeply imbedded in the structures of the paretic brain, these barriers have been stricken down, and the terms metasyphilitic and parasyphilitic cease to becloud the problem of syphilitic nervous and mental diseases. Cerebrospinal syphilis, general paresis and tabes are syphilitic diseases which represent end results of the activities of the *Spirochaeta pallida.*

Nonne writes that there is no social position, no age in which one can exclude the possibility of a previous infection. He has demonstrated that cerebrospinal syphilis may result from infection without primary lesion, as from penetration by an infected needle, and that so-called parasyphilis can probably be produced through spermatozoic infection without the necessity of cutaneous, mucomembranous or other lesions.[2] Wherever symptoms are presented, therefore, which suggest a syphilitic origin, the importance of painstaking investigation, both clinical and laboratory, will be seen.

The spirochete is an organism which can inhabit a host for years without causing any apparent disturbance. Infection by syphilis commonly leads to wide dissemination of the spirochetes throughout the body. There is early general distribution to the skin, mucous membranes and lymphatic system.

The blood vessels from the aorta to the finest capillaries, suffer because of genuine syphilitic disease. Involvement of the arteries (luetic arteries) may occur soon after the specific infection. Huebner's arteritis affects most often the arteries of the brain; and this arteritis may be one of the earliest causes of the brain disease.[1] Those vessels which are very small, without anastomosis and without vasa vasorum (and thus solely dependent upon the blood circulating through their lumina for sustenance) especially suffer damage from luetic toxin. Thus not only the retinal vessels, and renal capillaries, but also those of the cerebral cortex may be among the earliest to be invaded.

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[1] Nonne: Syphilis and the Nervous System.

[2] Mills: *New York Med. Jour.*, Jan. 31, 1914.

Both the central and peripheral nervous system may be affected relatively early. Frequently there is early meningeal involvement and severe infiltration. Experiments by A. Jakob and W. Weigant show that these changes originate in the mesodermal coverings or in the blood vessels of the entire nervous system. By extension the nervous parenchyma becomes involved.[3]

Gummatous processes, which represent reactive proliferations, begin their growth in the connective tissue both in the meninges and blood vessels. Especially at the base of the brain do we find them usually located in the neighborhood of the arterial trunks where they secondarily affect the nervous tissues by their presence. Gummatous meningitis is almost without exception combined with a fibrous hyperplastic meningitis. Whether occurring irregularly in small foci or as an extensive infiltration one finds, among the other processes, small-celled proliferations which always follow blood vessels and spring from them.[1]

We now know that the nervous system may be invaded in the primary or secondary stages, and the spirochetes can remain latent for a long time and then again renew their pernicious activity. We know, also, that among the pathologic changes which take place in the nervous system as a result of its activities disease of the blood vessels plays an important part. Nonne refers to the position represented by Steenberg and Lancereaux that the majority of clinical symptoms of syphilis are caused by changes in the arteries and their secondary consequences; and he further quotes the conclusions of Strasman and Beitzke; to wit, in the vasa vasorum and the perivascular lymph spaces the starting point of syphilitic vessel disease is to be found.[1]

An intensive study of paretic brains, recently made by Orton, further reveals the important part played by the vascular supply (arterial, venous, and lymph channels) in determining the topographic distribution of the lesions. As is well known, the lymphatic supply of the brain stands in such close relation to the blood vascular system that they may be considered together.

The position taken by Swift and Ellis is in accord with these conclusions; *viz.*, that while distribution by the spirochetes probably occurs through the blood stream, their resting place is largely in the hematopoietic organs and lymph spaces; for the latter the spirochetes have a special predilection. The subarachnoid space may be considered the great lymphatic sheath of the central nervous system. From it extend the perivascular lymph spaces which accompany the arteries and arterioles as far as the capillaries. The perineuronal spaces are also in direct communication with the subarachnoid space; consequently the spinal fluid, which may be considered the lymph of the central nervous system, is in intimate relation with both the vascular supply and the nerve cell.[4]

Those spirochetes which escape destruction in the blood stream find their way into hematopoietic organs and lymph spaces. Driven from defense to defense, they in this manner get intrenched, in some cases in a few months, but oftener five, ten or twenty years later, from which intrenched position they further invade adventitia of blood vessels and the nervous structure.

Further quoting Swift and Ellis, "The portion of the central nervous system which is most frequently involved in syphilis is the base of the brain between the peduncles and the optic chiasm. This is the site of one of the large subarachnoid cisterns, and from this region the process easily extends along the cranial nerves and arteries. Microscopical examination of the involved vessels shows that the most intense round-cell infiltration is in the adventitia, with an endarteritis as a secondary process. In a case of early syphilitic meningoarteritis Strassman showed that the spirochetes were most numerous in the adventitia and only occasionally present in the intima. This distribution is probably a result of the mode of invasion of the microörganisms, *viz.,* through the perivascular lymph spaces. This peculiar vessel change which is seen in all parts of the central nervous system, in all stages of the disease, undoubtedly indicates that the chief mode of extension of the infection through the nervous system is by the perivascular lymphatics rather than through the blood stream."[4]

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[3] *Am. Jour. of the Med. Sci.*, Vol. CXLVII., No. 6; No. 507.

[4] Swift and Ellis: *New York Med. Jour.*, July, 1912.

From diagnostic, prognostic, and therapeutic points of view we must ever bear in mind these peculiar anatomical conditions. Only by doing this can we understand that we are not dealing with a nervous disease alone, but with one in which the toxins attack every important tissue of the body, with a disease which requires more persistence and skill to circumvent than almost any other known.

The infecting organism, first distributed by the blood and lymph, hiding away in the perivascular lymphatics there begins insidiously to work its ravages. Its existence in the body fluids or tissues may now be ascertained by laboratory methods. Through study of the biological anomalies we may learn of its presence. These may precede by a considerable interval of time the clinical evidences of nervous syphilis. It must be remembered, however, that laboratory evidences are not invariably to be found; especially is this true of the arteritic cases. We must agree with Nonne that "if one does not wish to run the risk of grave diagnostic errors he has still to apply a careful and detailed clinical examination in each individual case." Some skeptics and critics have already sarcastically remarked that the pivot of medical examination lies, nowadays, in the laboratory, but this is by no means correct. And Kaplan writes, "The function of the laboratory is not to diagnosticate syphilis; its duty is to report the results of a test-tube experiment that has only a certain amount of specificity. Syphilis should never be diagnosed in the laboratory, nor should the laboratory worker consider himself competent to give the final decision."

The presence of the *Spirochaeta pallida* is revealed by symptoms which may be manifested from birth to the final dissolution of the organism. When the nervous system is involved, the symptoms are multiform. The individual symptoms or groups of symptoms differ in no wise from those resulting from other poisons which may attack the nervous system. They depend (1) upon the character of the syphilitic process (whether predominantly of arteritis, meningitis, gummatous changes, root neuritis) or combinations of these processes, with their crippling results upon nerve cells and fibers; and (2) upon the location of these lesions as they involve the nervous structures.[1] The injury wrought by the provocative agent may be preponderately disease of the spinal cord.

The spinal cord, in respect of its functions, is not one organ but a collection of several organs with motor and sensory conductive functions. Depending upon the vessels selected by the luetic changes, and the accompanying meningitic and myelitic processes, we have the special localizing symptoms in accordance with the involvement of special areas of cells and fibers, or tracts of fibers, and of spinal nerve roots which may be either compressed or infected by the meningeal exudate.

Much more complicated in their interrelations is that collection of organs grouped together as the brain. Luetic alterations here produce multiform manifestations and these are in various combinations. Knowing the important structures which lie bathed in the lymph contained in that large subarachnoid cistern between the peduncles and the optic chiasm, we can readily understand why this is the favorite location of pachy- and leptomeningitis, and how the optic and oculomotor nerves are often affected by the specific exudate, also how the meningeal affection extends very frequently to the region of the arteria fossæ sylvii, and how isolated specific meningitis may irritate, injure or compress the roots of individual cranial nerves.[1] We may have pareses, monoplegia, hemiplegia, aphasia, etc. With these localizing symptoms of all grades of severity resulting from damage to sensory and motor cells with their connecting fibers, we may have combined the general symptoms of brain disease, *viz.,* headache, dizziness, vomiting, respiratory and circulatory changes, and also disorders of consciousness and the mind.

Coma, stupor, clouding of consciousness, emotional and sensory perceptive disorders quite commonly accompany the more marked somatic signs which I have enumerated. So also do we find varying degrees of mental disorder manifested even in cases where the luetic toxin has not yet produced a specific process on a certain spot. Here the mental symptoms have developed as the indirect result of syphilis upon the system. We know that severe infections, such as typhoid bacillus and streptococcus will leave their marks upon cerebrocortical functions, with resulting neurasthenic and psychotic states. We know also that "the histologic nucleus about which tabes and paresis gradually develop must be present for a long time before clinical manifestations of the coexistent taboparesis are evidenced."[5] So also the toxic substances which are by-products of the life of spirochetes hidden in the deeper recesses of the body produce "nervous" symptoms, even deranged mentality of various types and varieties. These symptoms, which have been regarded as characteristic of the so-called nonorganic diseases, such as neurasthenia, psychasthenia and hysteria, may take their rise in the nutritional disturbance of brain cells which must inevitably result from (1) the postsyphilitic poison, or (2) the severe changes in the blood alone, or (3) the disease of the passages through which the blood is conveyed to the tissues; secondarily also (4) by involvement of the intra- and extravascular lymph channels, and (5) by chronic inflammatory disease of the leptomeninges and the consequent disturbance of the relationship between the intracerebral lymph channels with the epicerebral space. Through these a disturbance of the permeability of the lymph channels in the entire brain may result. In this way the exchange between the lymph and the blood is retarded, and sometimes prevented, so that by the retardation of both the removal and replacement of the waste products of metabolism, a disturbance of the nutrition of the nervous elements takes place.[1] These disturbances can not fail to have their corollaries of disorder among the higher cerebrocortical functions of consciousness, perception, memory, attention and the will. In my experience these symptoms have supplied most valuable diagnostic indications of early cerebrospinal lues; indeed, in many instances it was for these symptoms that the patient sought relief; although further neurological examination discovered the classical somatic accompaniments, faintly marked in many instances, but still measurably deviating from the normal.

The mechanism of the production of syphilis of the nervous system, so far as it is revealed through modern methods of research, emphasizes the truth of Fournier's dictum, "Syphilis does not die, it only sleeps." But it also must impress upon us the need for early diagnosis with prompt inauguration of therapeutic measures and persistence in carrying them out if we would hope to meet with success in our attempt to modify the underlying cause and its resulting pathological processes; for "syphilitic processes react best, and quickest to treatment if they are recent processes, which have not as yet caused regressive changes, such as are found in gummata and connective tissue scars."

In referring to that gravest of all luetic affections, general paresis, Kaplan writes, "It is a gratifying fact that biological abnormalities precede the clinical by a time interval sufficiently great to permit of therapeutic efforts heroic enough to ward off this disease which is so hopeless when once it is apparent clinically." This very fairly indicates that which should be our course of procedure whenever we encounter clinical or laboratory evidence of syphilis, of arteritis and leptomeningitis, with the resulting disturbance of nutrition of nervous elements due to the luetic process. The ultimate results of any form of treatment hinge so largely upon early diagnosis that the importance of early recognition can not be overestimated. And, persistence in treatment is essential if we would prevent, circumvent, or alleviate the ravages of the spirochete once it gains entrance to the lymph spaces of the central nervous system, where it is most difficult to reach.

In the method perfected by Swift and Ellis for the treatment of cerebrospinal syphilis by salvarsanized serum, we are supplied with measures which represent a distinct advance over other methods of reaching these deeply seated processes. With proper technic, in skilled hands, this method is safe, and in selected cases brings results which, in our experience in a large series treated at the West Penn and St. Francis Hospitals, have been more effective than any attained by other methods. Even in advanced and apparently unimprovable cases both clinical and serological improvement have been noted in practically every case.

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[5] Kaplan: Serology of Nervous and Mental Diseases.

Serious results can follow so-called intraspinous treatment (*a*) when administered by men lacking the skill which comes from actual experience, (*b*) from errors in its rather complicated technic, (*c*) from unwise selection of subjects, and (*d*) from ignorant or reckless attempts to alter or modify the serum, as in the Los Angeles cases.

The method, therefore, should not be applied at random, lest we accomplish for this what has been done in every age, namely, to give some measure of justification for D'Alembert's caustic criticism, where he likens a physician to "a blind man who armed with a cudgel strikes at random, and, according as he strikes, annihilates the disease or the patient."

RESULTS IN A SERIES OF FORTY-FIVE CASES OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM TREATED BY THE SWIFT-ELLIS SALVARSANIZED SERUM METHOD.

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(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

The following report is based upon a series of forty-five cases treated by the Swift-Ellis method. The treatments were given in the psychiatric service of Dr. W. K. Walker and myself in St. Francis Hospital, and in our neurological service in The Western Pennsylvania Hospital. There were no deaths or neuro recurrences which could be attributed to the treatment. Two patients died while under observation, one from pneumonia following exposure to heat, the other from the apoplexy of advanced paresis. There were in all 128 Swift-Ellis administrations; following four of these there was a rise of temperature as high as 102° F. (the highest reached) which dropped within a few hours. Six patients showed brief, somewhat severe, though not serious, symptomatic reactions taking the form of the pains or vomiting or other symptoms which had previously marked the course of the the disease. Out of the total of forty-five cases there were ten that received too few treatments upon which to base significant conclusions. Of the remaining thirty-five there was but one case where the spinal fluid cell count failed to drop during the course of the treatment; and there was no case among these which did not show some clinical improvement.

The cases are grouped under three headings, paresis, tabes, and cerebrospinal lues, though in making a classification of syphilis of the central nervous system it must be kept in mind that we are dealing with a progressive disease, and that every syphilitic with cerebrospinal involvement is a candidate for tabes or paresis. The mixed types and indefinite cases, therefore, have been placed in that group toward which their predominant symptoms seemed to point. Many of our cases come to us late, after the disease process has existed for years, and has settled fairly definitely into one of the general classes. But even in these old, fairly typical cases we meet a changing process.

Half of our series fall into the paresis group, and all but four of these patients were in advanced stages of the disease. From the standpoint of cure the paretics are the least hopeful of the three divisions. In general the results of treatment of this group were an alleviation of symptoms with longer and more frequent remissions than had been previously observed. It is a striking fact that in many of the paresis cases there has come about a return of insight and an ability to resume work to an extent which we did not find under the older methods of treatment.

There were thirteen cases of cerebrospinal lues. From the standpoint of cure these are the most hopeful cases. They are driven to the physician early, as a rule, owing to alarming symptoms which arise generally as a manifestation of active meningeal involvement, and fortunately the Swift-Ellis treatment gives ready access to this involvement through the medium of the spinal fluid. The results in the majority of our cerebrospinal cases were most satisfactory, and indicative of permanency. In practically every case there was entire relief from headache and pain, which in this group is almost always present in some distressing form, as well as from the accompanying organic disturbances such as gastric renal or sphincter irritation; there was also recovery from ocular or other palsies.

In regard to this great variety of symptoms conspicuous in the cerebrospinal cases, it might be well to touch upon the connection existing between them and the nature of the involvement of the central nervous system. Cerebrospinal syphilis is, as we know, largely a meningeal involvement; and the path of infection to the meninges is generally through the lymph stream. When one recalls the extensive ramifications of the meningeal covering of the brain and cord, bathed in its entirety by this lymph stream, it becomes plain that an inflammatory process affecting this membrane may give rise to an almost unlimited variety of symptoms. Since a favorite site for early meningeal involvement centers around the important lymph space at the base of the brain, between the optic chiasm and the crura cerebri, it follows that very early in the process there will be significant diagnostic ocular symptoms, —pupillary or retinal changes, or oculomotor palsies, as well as palsies involving other cranial nerves. Similarly a great variety of symptoms arises largely through the spreading of the inflammatory process to the posterior root zones of the cord, manifesting itself, for the most part, in a variety of sensory symptoms,—parasthesias and analgesias, pains and functional disorders referred to the viscera or to the body surface innervated by the particular cord segment involved.

There were nine cases of tabes. From the standpoint of cure these are less hopeful than those of the preceding group; the process has penetrated deeper, beyond the meninges, into the substance of the cord itself, as in paresis the involvement is deeper, having reached the brain substance. The tabes cases, because of the routine syndrome presented and the tendency of the symptomatology to remain more or less fixed, enabled us advantageously to observe an important, though well-known, diagnostic distinction; namely, that symptoms of a functional nature, on an inflammatory basis, may simulate precisely the picture presented when the symptoms arise as a result of actual nerve tissue destruction. For example, a patient may exhibit a condition such as extreme ataxia which indicates actual nerve destruction; but if under treatment an astonishing amount of the ataxia disappears, it is clear that the entire nerve tissue supplying the affected part has not been damaged irreparably, but is as yet, to a large extent, in the inflammatory state preceding destruction. In Case 2 in tabes the patient came under observation with Argyll-Robertson pupils, and was unable to walk. Six months after beginning treatment he walked comfortably without a cane, and his pupils showed fairly normal reactions. There was marked improvement in gait in cases 2, 3, 6, and 7; urinary incontinence and gastric disturbance ceased in cases 1, 6, and 9. Extending over a more diversified symptomatology, an arrest of symptoms, indicating similar disease conditions, was observed in the other groups, particularly in the cerebrospinal cases.

One must remind oneself, in estimating the possibilities of any treatment, that nerve tissue once destroyed can not be replaced. What we hoped for in the tabes cases, as well as in those of the other groups, and believe we have accomplished, has been a betterment of the patient's general health through elimination of toxins; and an arrest of those symptoms arising from a still active inflammatory process.

An outline of the Swift-Ellis treatment, which has been followed with some variation in these cases, was first published three years ago in the *New York Medical Journal*.[1] The chief steps are as follows: (*a*) An intravenous injection of salvarsan is administered; (*b*) one hour later fifty cubic centimeters of the patient's blood is withdrawn, from which a forty per cent. solution of serum is obtained; (*c*) on the following day a sufficient amount of the patient's spinal fluid is withdrawn, and immediately thereafter twenty-five cubic centimeters of the forty per cent. solution (after being inactivated at 56° C.) is injected into the spinal canal. The rule is to repeat this treatment at intervals of two weeks, when indicated by the laboratory findings and the clinical course.

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[1] *New York Med. Jour.*, July 13, 1912, p. 53.

We have varied this procedure to some extent. Latterly we have reduced the interval between the injection of the salvarsan and the withdrawal of the blood from an hour to one half an hour. This is done with a view to obtaining a serum more powerful in its immunizing properties against the syphilitic virus. Another departure has been to introduce into the spinal canal a higher strength serum than the routine forty per cent. solution, if we find that the latter strength is not producing average clinical and laboratory improvement, unless an increase is contraindicated by symptoms of intolerance. This deviation is made also in certain fulminating cases where it is essential to reduce the virulence of the process as vigorously as the patient's resistance will warrant. In cases 8 and 9, rapidly progressing paresis, the patients were given a sixty per cent. solution from the beginning.

There has been much discussion as to which method of salvarsan administration (the intravenous or the intraspinous) is most effective, and as to whether intravenous treatment alone will not finally bring about the desired results. It seems to me that it is not a question of the use, as a routine practice, of one or of the other alone; each has its place. The question is rather a matter of deciding in a given instance which of the two is indicated. A case has been under observation recently where the indications for intravenous were definite. The patient showed a typical clinical picture of paresis with a history of chancre eight years previously; blood gave a positive Wassermann reaction and spinal fluid was entirely negative. The findings indicated that the infection was probably through the blood stream, or endarteritic, rather than through the lymph channels, or perivascular, and could be reached therefore most readily through the blood stream; that is, by the intravenous route. On this hypothesis the patient is being treated intravenously with excellent results. This is one of the exceptional cases of syphilis of the central nervous system in which we withhold intraspinous treatment unless the spinal fluid later shows infection.

Our observations lead us to conclude that intravenous administration as a routine practice, does not give the results, in cases of spinal fluid infection, that are obtained by the Swift-Ellis method. Though in certain cases the intravenous may prove efficacious, it is almost always slower, requiring a greater amount of salvarsan; frequently it fails entirely to reach the seat of infection. Case 1 in the tabes group showed an increase of cells under two full-dose intravenous administrations. The cells doubled, increasing from 17 to 32. After but one Swift-Ellis the cells dropped to one. Case 2 in the same group began treatment with a cell count of 67. Under two intraspinous injections the cells dropped to 20. An intravenous injection was now substituted and the cells remained stationary. The patient then neglected treatment and his cells rose to 66; under one intravenous injection the cells still increased, reaching 79; an intraspinous injection was now given which brought about an immediate drop to 27, and again a marked improvement in clinical symptoms which had previously improved following intraspinous injection, but had showed very slight improvement after intravenous. The course here shows that in these cases the infection was being inadequately reached, if at all, by intravenous injections.

Cotton[2] concludes, from his observation of twenty-one cases of early paresis, that salvarsan used intravenously is not adequate. He states that intravenous injections alone do not seem to give results. He further says that he has tried many times, always with failure, to find evidences of salvarsan in the spinal fluid after intravenous administration; he has found such evidence as late as two weeks after intraspinous injection.

This frequent failure of intravenous salvarsan to reach the seat of the disease, and the necessity therefore for the intraspinous, or Swift-Ellis method, is explained by a glance at the path of transmission through which the drug probably reaches the central nervous system. Under normal conditions the spinal fluid is, almost wholly, a product of the secretory function of the choroid plexuses. It follows that whatever substance we wish to introduce into the spinal fluid by way of the blood stream must pass through this gland (the word gland is used as covering the separate divisions of the choroid plexus in the lateral, third and fourth ventricles). Much discussion has arisen as to the permeability or nonpermeability of this gland, by salvarsan introduced into the blood. On one side it is declared that the spinal fluid is not reached by salvarsan administered by way of the blood stream; on the other, cases are cited with laboratory findings which show that the fluid may be so reached. This discrepancy in findings, it would seem, does not hinge upon the permeability or nonpermeability of the normal gland. The explanation may be found in the fact that the gland being a vascular fold of the pia, a meningeal membrane, becomes itself a seat of inflammation, and its normal function thus becomes crippled or abolished.

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[2] Paper read before the Neurological Section, A. M. A., June, 1914.

In our later cases we have been guided in a measure as to the method of treatment and strength of serum by the symptomatic reaction following the routine preliminary administration of salvarsan; that is, we have carefully observed the severity of the symptoms arising, such as pain, temperature, gastric disturbance, etc., which had previously characterized the course of the disease; if severe, following injection of salvarsan into the blood, for the purpose of obtaining the serum for intraspinous injection the following day, the inference was that the cerebrospinal lesion has been reached. Such symptomatic reaction had served as a guide to the strength of the serum to be used; if very severe we omitted intraspinous administration.

In our earlier cases we used mercury and the iodids simultaneously with the salvarsan treatments. But we now alternate the two kinds of medication, withholding mercury for at least a week before the injection of salvarsan. We do this because of the well-known irritating effect of mercury upon the kidneys, making them more likely to show intolerance of the other drug.

For various reasons a full biological report was not obtainable upon every case at the time of admission. The following studies were made from those in hand.

Out of 38 Wassermann reports on the blood, 9 were positive and 29 negative. The entire series of tabetics were negative.

Of the 24 Wassermann reports on the spinal fluid, 14 were positive, 10 negative. The paretics were predominantly positive.

Of the 39 globulin reports on the spinal fluid, 33 were positive, 6 negative. The globulin was positive in every case of the cerebrospinal group, with a much more pronounced average reaction than in the cases of the other groups. The globulin reaction in the paretics was generally positive; most of the occasional negatives were among the tabetics.

The cell count averaged highest in the paretics; came next in the tabetics; and averaged lowest in the cerebrospinal luetics.

The final Wassermann on the spinal fluid was plus in every case but one of paresis. This single case had been diagnosed as very early paresis. These findings are in keeping with the observations of other investigators as to the Wassermann fast reaction. The persistence of this reaction is of a good deal of prognostic significance.

The change in the globulin reaction from positive to negative occurred with greatest frequency in tabes, next in frequency in paresis, and with least frequency in cerebrospinal lues. However, the last group averaged fewer treatments.

In those cases of cerebrospinal lues giving evidence of an acute inflammatory process, there was often a moderate reduction in the cell count, under rest alone with elimination. This reduction was the measure of the powers of resistance brought about by bettering the patient's general condition. In such cases, it is after this brief period of rest that we begin treatment.

It seems well to sound a word of warning as to the careless and indiscriminate use of salvarsan therapy. There seems to be a notion prevalent that the handling of these cases is a simple matter; that treatment means but a routine, perfunctory administration of certain amounts of a given specific. The facts are that we are dealing with a powerful therapeutic agent, the amounts of which must necessarily be carefully controlled, and adapted to each individual case. There have been enough cases carefully and scientifically handled to lead us to believe that it is a most efficacious as well as safe remedy for syphilis if rightly used. But no physician unable, or unwilling, to make careful note of the finer mental shadings, and the delicate, often obscure neurologic changes indicative of the progress or trend of the disease, and to see that the technic of the administration is all that is desirable, has any right to take into his hands the responsibility for the use of this remedy.

We wish to acknowledge our indebtedness to Dr. Andrews, pathologist, and Dr. Bronfenbrenner, serologist, at the Western Pennsylvania Hospital; and to Dr. Moyer, pathologist, and Drs. Clark and Koenig, resident psychiatrists, at St. Francis Hospital.

CASES OF PARESIS.

Case 1.[3] Man, aged forty, white, American, blacksmith, married, had gonorrhea fifteen years ago; wife had two miscarriages. History of dizziness, staggering gait, weakness and numbness of arms and legs, weak voice; in hospital six months earlier for stomach trouble and pain in head; since this time has lost twenty-five pounds. Duration of symptoms nine months.

Examination: *Bien-etre* (patient felt unusually good); marked speech defect; tremor of muscles, especially facial; excessive restlessness; pulse 115. Tortuous radials. Rombergism. Pupils, left greater than right; Argyll-Robertson. Elbow jerks absent; knee jerks absent. Blood Wassermann —; spinal fluid Wassermann —; globulin ++; cell count 102.

Three months from beginning of treatment: Clinical symptoms were greatly ameliorated; a gain of thirty pounds in weight; patient returned to work.

Case 2.[3] Man, aged thirty-one, white, American, boiler-maker, single. "Typhoid" fifteen years ago. Lues denied. History of grandiosity, disorientation as to time and persons, hallucinations; headache, disturbed speech, restlessness. Duration of present symptoms three weeks.

Examination: Extreme grandiosity; has "eighty-nine hundred thousand million dollars" and "five wives"; irritability, loquacity, Rombergism. Pupils, right larger than left, irregular, sluggish to light and accommodation. Tremor of eyelids, facial muscles, tongue. Elbow jerks exaggerated, equal; knee jerks exaggerated, equal. Blood Wassermann —. Spinal fluid too bloody for count.

Clinical improvement was maintained eight months after beginning of treatment; return of insight, disappearance of grandiose delusions, working at laying brick. Final cell count 25.

Observation three months after the above: Mildly grandiose; sp. fl. cells 13, Noguchi —, Wass. +, bl. Wass. ++.

Case 3.[3] Man, aged fifty-two, German, had chancre twenty-eight years ago; of twelve children five died in infancy; wife had one miscarriage. History of pains and sense of weight in right leg for fourteen years, right knee swollen and painful fourteen years ago (Charcot?), right hip broken fourteen years ago when lifting; has not worked since; girdle sensation; incontinence of urine five years.

Examination: Depressed, irritable, paranoid. Pains and aches especially in soles of feet and palms of hands; markedly analgesic over entire body. Impacted fracture of neck of femur (bone rarefaction) with shortening of three inches. Pupils unequal, Argyll-Robertson. Plantars unequal. Elbow jerks absent. Knee jerks absent. Blood Wass. +; sp. fl. Wass. +, globulin, +, cell count 61. Unusual sense of well-being two months after admission.

Three months after beginning treatment analgesia and incontinence disappeared; much better use of arms and legs; early paresis symptoms still present; cell count 3.

Case 4.[3] Man, aged forty-two, white, laborer, married, gave history of changed disposition, recurring attacks of headaches and dizziness, lessening sexual power, diplopia one year ago. Duration of present symptoms two years.

Examination: Depressed; speech defect, tremor of facial muscles and tongue. Slight Rombergism. Pupils, right greater than left; Argyll-Robertson. Elbow jerks + and equal; knee jerks + equal; plantars diminished. Bl. Wass. —; sp. fl. Wass. +; globulin +; cells 124.

Five months after beginning of treatment depression had disappeared, speech defect negligible; patient at work; cells 5.

Case 5.[3] Man, aged thirty, boat engineer, single, had chancre twelve years ago. History of falling attacks; stitch-like pains in hips and legs, pain in right side, numbness along ulnar sides of forearms; stomach trouble. Lost forty pounds. Duration of present symptoms four months.

Examination: Mildly hallucinatory and paranoid, irritable, dull, anxious, weak memory; speech slurring, tremulous bleating. Tremor of tongue and facial muscles. Ataxia of hands. Pupils, unequal, sluggish. Elbow jerks unequal, right +, left depressed; knee jerks +. Bl. Wass. +; sp. fl. Wass. +; globulin +. Cells 57.

Four months after treatment insight had returned, speech improved; pains less, no stomach trouble. Complains of weakness and inability to work. Cells 9. Sp. fl. Wass. +; globulin ±; bl. Wass. —.

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[3] See table for details of treatment and laboratory results.

Case 6.[3] Man, aged thirty-one, white, clerk, single, had chancre nine years ago. History of insomnia, headache, pain in abdomen; threats to kill. Stole money and articles of clothing. Duration of present symptoms five weeks.

Examination: Delusions of persecution, irritability, emotional instability, grandiosity, suspicion; mannerisms, tremor of tongue, lips and hands. Pupils, unequal, irregular, Argyll-Robertson. Elbow jerks exaggerated and equal; knee jerks unequal and +. Bl. Wass. —; globulin +; cells 301.

Four months after beginning of treatment there was general improvement; insight returned; euphoria of paresis present; cells 9.5.

Case 7.[3] Man, aged thirty-four, white, clerk, married, had gonorrhea twelve years ago. History of uncontrollable obsessions ("must kill wife and children"), depression, nervousness, insomnia, lack of concentration; vomiting followed by appendectomy six months before admission; headache and backache; inability to work during past year. Duration of present symptoms one year.

Examination: Apprehensive, restless, depressed, emotional; speech defect. Pupils, myotic and equal, fixed. Elbow jerks depressed; knee jerks depressed. Bl. Wass. —; globulin +; cells 10.

Three months after beginning treatment there was marked clinical improvement; obsessions disappeared. Cells ?, bloody fluid.

Case 8.[3] Woman, aged forty-four, negro, married, has five living children; denies lues. History of sore throat and aching joints six months ago; severe shock from fall and family worries five months ago. Duration of present symptoms six months.

Examination: Several days' active delirium; emotional, passing quickly from crying to laughing; no sense of pain; marked tremor of facial muscles; slurring, tremulous speech; toxic, weak. Pupils, slight difference in reaction; hippus. Elbow jerks +++; knee jerks+++; Oppenheim double.

Six weeks after beginning treatment patient had gained in strength, become euphoric; speech improved. The case presented the picture of paretic remission. Cells 15.

Case 9.[3] Man, aged thirty-one, white, laborer, single, had chancre (?) one and one half years ago followed by three intravenous salvarsan injections and course of Hg. Gonorrhea seven years ago. History of nervousness particularly the last year; periods of depression and insomnia; vomiting spells for fifteen years, occurring about once a week.

Examination: Very emotional, mildly paranoid, depressed. The patient passed within a week into a state of euphoria; saddle nose. Pupils fairly normal; reflexes +. Bl. Wass. —; sp. fl. Wass. ±: globulin ±, cells 8.5.

TABLE A.

	Blood.	Cerebrospinal Fluid.					Final C-S Fluid.		No. of Treat's.	Total Amt. "606".	Total Amt. and Av.% Serum Used.
Case.	Wa. R.	Wa. R.	Nog.	Cells 1st	Cells 2d Tr.	Cells Fin.	Wa. R.	Nog.			
	PARESIS.										
1.	—	—	++	102	32	6		±	4Sw	1.6 gm.	100 c.c. 40% sol.
2.	—			?	5	13	+	—	2v 4Sw	2.7 gm.	100 c.c. 40% sol.
3.	+	+	+	61	31	3	+	+	1v 5Sw	1.6 gm.	115 c.c. 42% sol.
4.	—	+	+	124	21	5	+	—	6Sw	3 gm.	140 c.c. 40% sol.
5.	+	+	+	57	20	7	+	±	5Sw	2.3 gm.	125 c.c. 54% sol.
6.			+	301	47	9	+	+	7Sw	3.4 gm.	160 c.c. 40% sol.
7.	—		+	10	8	?		±	5Sw	2 gm.	100 c.c. 40% sol.
8.		+	±	152	18	15	+	+	3Sw	.9 gm.	75 c.c. 60% sol.
9.	—	±	±	8.5	2.5	1	—	—	3Sw	1.3 gm.	75 c.c. 60% sol.
	TABES.										
1.	—	—	—	17	32	1	—	—	2v 2Sw	1.4 gm.	55 c.c. 40% sol.
2.	—	+	+	129	67	27	—	±	2v 4Sw	2.4 gm.	200 c.c. 50% sol.
3.	—		+	21	18	5	+	±	3v 7Sw	4.5 gm.	160 c.c. 40% sol.
4.	—	—		9	20	8		—	3v 7Sw	4.7 gm.	160 c.c. 40% sol.
5.	—		+	28	16	?		—	1v 5Sw	2 gm.	110 c.c. 40% sol.
6.	—			20	3	3		—	1v 3Sw	1.6 gm.	75 c.c. 40% sol.
7.	—	+	+	14	5	7.5	+	±	3Sw	1.1 gm.	70 c.c. 45% sol.
	CEREBROSPINAL SYPHILIS.										
1.	—	—	+	16	14	2	±	±	4Sw	1.8 gm.	115 c.c. 47% sol.
2.	—	—	+	13	9	3	—	—	1v 4Sw	2.6 gm.	105 c.c. 47% sol.
3.	+	+	+++	19.5	17.5	3.5	—	+	2v 3Sw	2.2 gm.	85 c.c. 45% sol.
4.	+	+	+	59	1.5	20	+	+	4Sw	2 gm.	110 c.c. 45% sol.
5.	—	—	+	17	?	3	—	±	1v 5Sw	2.6 gm.	100 c.c. 40% sol.
6.	—		+	36	18	15		+	4Sw	1.6 gm.	60 c.c. 40% sol.

N. B. In the above table the sign v is used to indicate intravenous; thus, 2v 4Sw indicates that in the case referred to two intravenous treatments alone plus four Swift treatments were given. The sign ± indicates weakly positive. The strength of serum indicated is the average for the number of treatments given; see Table B.

Three months after beginning treatment euphoria was still maintained; stomach symptoms disappeared; back at work.

Case 10. Man, aged twenty-nine, had chancre seven years ago. Typical paretic picture: Euphoria, hallucinations, delusions; usual physical signs. Bl. Wass. +; sp. fl. Wass. +; globulin +, cells 52.

Patient was under observation three weeks with two Swift treatments. Total amount salvarsan 1 gm. Total serum injected 50 c.c. of 55 per cent. sol. Symptoms unimproved. Final laboratory findings: Sp. fl. Wass. +, globulin +, cells 17.

Case 11. Taboparesis. Woman, aged thirty-two. Euphoria, speech defect; unable to walk for two years, bladder symptoms. Bl. Wass. [illegible]; sp. fl. Wass. +, globulin +, cells 14.

Under observation one month with two Swifts. Amt. 606 .8 gm.; amt. serum 50 c.c. 50 per cent. sol. Speech improved. Bl. Wass. +; sp. fl. Wass. ±, globulin ±, cells 12.

Case 12. Man, aged twenty-eight, had chancre eight years ago. Sudden onset with acts of violence amnesic periods, grandiosity; failing vision, drowsiness, typical physical signs. Sp. fl. globulin +, cells 170.

Under observation six months. Salvarsan given intravenously three times followed by one Swift treatment. Amt. 606 2.4 gm.; amt. serum 25 c.c. 40 per cent. sol. Under intravenous no improvement in mental symptoms, but cells dropped to 18. Following Swift was a remission of mental symptoms for three months. Following exposure to heat and exertion patient became stuporous, contracted pneumonia and died.

Case 13. Man, aged twenty-seven, was euphoric; speech defect, marked muscular tremors especially of arm and head, with other typical symptoms. Bl. Wass. —; globulin ±, cells 5.

Under observation three months with two Swift treatments. Amt. 606 1 gm.; amt. serum 50 c.c. 40 per cent. sol. Tremors much improved. Globulin —, cells 5.

CASES OF CEREBROSPINAL LUES.

Case 1.[3] Man, aged thirty-six, white, iron worker, married, had chancre two and one half years ago, followed by general eruption. History of sharp pains in epigastrium extending [illegible] and thighs, night sweats, backache, loss of forty pounds during past six months. Four months treatment with Hg. at time of chancre. Duration of present symptoms three months.

Examination: "Neurasthenic". Station good. Pupils, equal, irregular, fairly normal reaction. Elbow jerks and knee jerks +. Bl. Wass. [illegible]; sp. fl. Wass. —; globulin +, cells 16.

Four months after beginning treatment: Stomach symptoms gone; gain of thirty-two pounds back at work. Cells 2.

Case 2.[3] Man, aged forty, white, carpenter, married, had chancre twenty-two years ago, followed by one year's treatment. History of failing eyesight during past year; partial deafness; severe pain in back of neck; dizziness; disturbance of gait: numbness in right fingers. Duration of present symptoms one year.

Examination: Emotional, anxious. Pupils, unequal, slow and limited excursion, discs show paleness of temporal quadrant. Elbow jerks unequal; knee jerks unequal. Bl. Wass. [illegible]; sp. fl. Wass. —; globulin +; cells 13.

Two months after beginning of Swift treatments headache and numbness had disappeared: hearing and sight improved. Three months later, the patient complaining of some pain, a Swift treatment was given though the spinal fluid and blood were normal: this was followed by severe pain reaction.

Case 3.[3] Man, aged twenty-five, white, chemist, married, has no children. Chancre four and one

TABLE B.

Date.	Blood. Wass.	Spinal Fluid. Cells	Spinal Fluid. Glob.	Spinal Fluid. Wass.	Treatment. Intravenous.	Treatment. Intraspinous.
			CASE 2.—TABES.			
12/18/13	—	129	+	+	Hg KI	
2/13/14		67	±	+	.6 gm. 606 Hg KI	30 c.c. 40% Serum
3/5/14		20	±	—	.6 gm. 606 Hg KI	25 c.c. 40% Serum
3/23/14					.3 gm. 606	
4/6/14		19.2	±	—	.3 gm. 606	25 c.c. 50% Serum
5/15/14		11	—	—	Hg KI	
7/6/14		66	±	—	.4 gm. 606 Hg. KI	
7/31/14		79	±	—	.6 gm. 606	30 c.c. 75% Serum
8/18/14	—	27	—	—		
			CASE 3.—PARESIS (TABO).			
2/3/14	+	61	+	+	.6 gm. 606 Hg KI	25 c.c. 40% Serum
2/13/14		31	±	+	.3 gm. 606	15 c.c. 40% Serum
3/5/14		10.5	±	+	.3 gm. 606 Hg KI	20 c.c. 40% Serum
3/24/14	—	5.5	±	+	.3 gm. 606	25 c.c. 40% Serum
4/6/14		3	±	+	.2 gm. 606 Hg KI	30 c.c. 50% Serum
8/22/14		13.5	+			
			CASE 2.—CEREBROSPINAL LUES.			
2/5/14	—	13	+	—	Hg KI	
2/27/14		9.3	±	—	.3 gm. 606 Hg KI	25 c.c. 40% Serum
4/10/14		4	—	—	.6 gm. 606	30 c.c. 50% Serum
5/1/14	—	2	—	—	.5 gm. 606 Hg KI	30 c.c. 40% Serum
8/12/14	—	3	—	—	.3 gm. 606	30 c.c. 50% Serum
			CASE 4.—TABES.			
4/17/13	+	9	—	—	.6 gm. 606 Hg KI	25 c.c. 40% Serum
5/28/13		5	±		.5 gm. 606 Hg KI	25 c.c. 40% Serum
11/12/13	+	20	±		.4 gm. 606	25 c.c. 40% Serum
12/17/13		23	—		.6 gm. 606	25 c.c. 40% Serum
2/24/14		12	±		.6 gm. 606 Hg KI	25 c.c. 40% Serum
3/16/14		8	—	—	.6 gm. 606	25 c.c. 40% Serum
4/14/14		?	—	—	.6 gm. 606	25 c.c. 40% Serum
9/10/14		9	—	—		
			CASE 4.—PARESIS.			
4/22/14		124	±	+	.6 gm. 606 Hg KI	25 c.c. 40% Serum
5/25/14		21	±	+	.6 gm. 606 Hg KI	25 c.c. 40% Serum
6/12/14		31	—	+	.6 gm. 606	25 c.c. 40% Serum
6/25/14		19	+	+	.6 gm. 606 Hg KI	25 c.c. 40% Serum
7/9/14		17	—	+	.6 gm. 606	25 c.c. 40% Serum
8/16/14		13	—	+	.6 gm. 606	25 c.c. 40% Serum

Details of treatment of certain cases referred to by history number.

half years ago; wife miscarried at seventh month. Sudden attack three weeks before admission left patient unable to walk and with extreme weakness of left arm and of voice. History of irritability, depression, weakness, pains over body especially left shoulder, eye trouble three years ago and weakness of left arm, girdle sensation. Duration of present symptoms three weeks.

Examination: Emaciated; hoarse, talking with difficulty. Marked atrophy of left shoulder girdle, winged scapula, can not extend little finger of right hand; great swaying on attempts to walk, legs becoming crossed; slight analgesia below knees; coarse tremor of tongue; twitching of facial muscles. Pupils, great inequality, irregular; right fixed, left became so in two days; discs oval, cupped, slightly pale congested fundi. Elbow jerks, right ++, left ±; knee jerks, right +, left normal; plantars depressed. Bl. Wass. +; sp. fl. Wass. +, globulin +++, cells 19.5.

Five months after beginning treatment walking was much improved; ataxia of right hand reduced; girdle sensation absent. Cells 3.5. Three months later continued clinical improvement reported.

Under two months' intensive treatment with KI. and Hg. with two intravenous salvarsan injections, this patient's cells dropped from 19.5 to 7.5; clinical improvement was much more rapid after the Swift treatment.

Case 4.[3] Man, aged forty-two, white, ironworker, married, has one living child. Chancre twenty-five years ago. History of left-sided hemiplegia, improving spontaneously in three weeks.

Examination: Partial hemiplegia (spastic) of left side. Pupils, unequal, slow, limited. Elbow jerks +; knee jerks +++; both greater on left. Bl. Wass. +; sp. fl. Wass. +, globulin +, cells 59.

Two months after beginning treatment: There had been rapid gain in use of arm and leg; back at work feeling well. Cells 20. Four months later still working and feeling well.

Case 5.[3] Man, aged thirty, white, mechanical engineer, married, had gonorrhea nine years ago. History of irritability; failure in vision; trigeminal neuralgia; vomiting; "typhoid" eight months previous to admission, preceded by occipital pain and followed by impaired gait; mild euphoria. Duration of present symptoms one year.

Examination: Emotional, irritable, moody; marked occipital pain with retraction of head; tongue protrudes to right; slight Rombergism. Optic neuritis; pupils unequal, response to light unequal. Elbow jerks +, unequal; knee jerks ++, unequal, left Babinski; double Oppenheim; slight double ankle clonus. Bl. Wass. —; sp. fl. Wass. —, globulin +, cells 17.

Seven months after beginning treatment: There was marked general clinical improvement, patient back at work. Cells 3.

Case 6.[3] Man, aged thirty-seven, married, white, butcher, gave history of mental dullness; greatly impaired vision.

Examination: Primary optic neuritis; pupils, faint reaction to light, left greater than right. Elbow jerks, right present, left absent; knee jerks, right slightly more marked. Globulin +, cells 36.

Two months after beginning treatment there was very slight improvement; cells 15.

Case 7. Man, aged forty, had gonorrhea fourteen years ago. Pains in back and legs two years; numbness about rectum, urinary incontinence (partial) one year. Irregularities in reflexes. Sp. fl. Wass. +, globulin ++, cells 5.5.

Under observation one month with two Swift treatments. Amt. 606 .9 gm., amt. serum 27 c.c., 50 per cent. sol. Pains and bladder symptoms much improved. Sp. fl. Wass. —, globulin ++, cells 22.

Report two months later shows improvement still maintained.

Case 8. Man, aged forty-eight, was of neurasthenic type. Girdle-like sensation, paraesthesias. Symptoms ten years. Deep reflexes much exaggerated. Regarded as cerebrospinal lues though laboratory findings, except globulin, were negative. Bl. Wass. —; sp. fl. —, globulin +, cells 1.5.

Under observation one month with two Swift treatments. Amt. 606 .8 gm.; amt. serum 45 c.c. 40 per cent. sol. Moderate improvement of neurasthenic symptoms. Sp. fl. Wass. —, globulin ±, cells 3.

Case 9. Man, aged fifty-three, had chancre ten years ago. Progressive mental dulling for past three years. Optic neuritis; hemiparesis. Globulin ++, cells 10.

Under observation six months with intensive Hg. and KI., three intravenous 606 treatments followed by one Swift. Amt. 606 .5 gm.; amt. serum 25 c.c. 40 per cent. sol. Unimproved, further mental deterioration, apparently luetic dementia. Sp. fl. Wass. —, globulin —, cells 2.

CASES OF TABES.

Case 1.[3] Woman, aged thirty-seven, white, married eighteen years. Chancre and skin rash sixteen years ago: all her children (four) showed definite syphilitic lesions. Unable to walk for six years. History of numbness in legs with pains in back and legs for six years; gastric crises three years ago and stomach trouble past year; urinary incontinence during past two years. Duration of present symptoms six years.

Examination: Mental state excellent. Emaciated; analgesia below knees. Knee jerks absent. Pupils, stationary, equal and myotic. Bl. Wass. —; sp. fl. Wass. —, globulin —, cells 17.

Under three and one half months' intensive treatment with Hg. and KI. and two intravenous salvarsan treatments, patient's cell count increased to 32; sp. fl. Wass. became positive, and globulin became positive. Under two Swift treatments following the above, cells dropped to 1; sp. fl. Wass. became —, and globulin —.

Five months after beginning treatment, general condition was improved; pains, stomach trouble, incontinence and analgesia disappeared. Ataxia remained. Cells 1.

Case 2.[3] Man, aged thirty-five, white, laborer, single, had chancre (?) eleven years ago; eight years ago severe tabetic pains in legs, ceasing for two years after a course of mercury and iodids; six years ago condylomata about anus and sores on glans; ataxia for past three years becoming extreme one year ago with pains. History of general weakness and inability to work. Duration of present symptoms eight years.

Examination: Irritable but mental state excellent. Emaciated. Unable to walk; incoördination of arms. Pupils, equal; right slight reaction to light, left immobile. Elbow jerks absent; knee jerks absent; Babinski. Bl. Wass. —; sp. fl. Wass. +, globulin +, cells 129.

Six months after beginning treatment: Irritability had disappeared: there was ability to walk well without a cane. Pupillary reaction had become fairly normal.

Case 3.[3] Man, aged fifty-five, white, carpenter, married, six children, gave history of gonorrhea, pains in legs twelve years ago, uncertain gait and failing vision five years ago; incontinence of urine. Unable to get about for past one and a half years. Duration of present symptoms twelve years.

Examination: Mild delirium, irritability; marked ataxia; general scaling eczema, cutaneous hypersensibility except over legs: tremor of tongue and facial muscles, Rombergism. Pupils, unequal, irregular, static, cataract of left. Elbow jerks unequal; knee jerks absent. Bl. Wass. —; globulin +; cells 21.

Seven months after beginning treatment: General health was decidedly better; gait improved; skin eruption had disappeared. Cells 5.

Case 4.[3] Man, aged thirty-two, white, plumber, single, gave history of chancre; original pain and numbness in legs ten years ago; ataxic gait; incontinence; general weakness.

Examination: Pupils, unequal irregular: right stationary, left slight reaction. Elbow jerks depressed, unequal; knee jerks absent. Sp. fl. Wass. —; cells 9.

Gradual general improvement during the year's treatment; return to work. Cells 8.

Observation five months later shows cells 9: sp. fl. Wass. —, and globulin —, clinically as above.

Case 5.[3] Woman, aged forty, white, married twice, no children, gave history of pains in legs for nine years ("sciatica") becoming very severe three weeks before admission to hospital.

Examination: Clear mentally. Pupils, dilated. equal, irregular, fixed. Elbow jerks absent: knee jerks absent. Bl. Wass. —; globulin +: cells 28.

This patient's cells dropped from 64 to 28 under three months' treatment with Hg and KI alone, but her symptoms did not improve until the Swift treatments were begun. For more than a year after the Swift treatments ceased the patient was free from pain and worked. At the end of sixteen months she returned to the hospital complaining of pains and with a history of slight facial hemiparesis recently.

Case 6.[3] Man, aged forty-five, white, carpenter, single, had chancre fifteen years ago. History of shooting pains in legs and skin rash four years ago; difficulty in walking for two years; girdle sensation for four years; recently slight dribbling of urine and loss of weight. Duration of present symptoms four years.

Examination: Marked ataxia; Rombergism. Pupils, immobile irregular. Elbow jerks absent; knee jerks absent. Cells 20.

One year after beginning of treatment, patient is still much improved; is working; pains very slight; pupils show some reaction: gain of fifteen pounds in weight. Cells 3.

Under two months intensive Hg. and KI. cells remained stationary, 20; following first Swift there was a drop to 8 with much more rapid clinical improvement.

Case 7.[3] Man, aged fifty-six, white, laborer, married, had chancre thirty years ago; wife had one miscarriage. History of pains in arms and legs; great difficulty in walking past five years: deafness twelve years; severe constipation. Duration of present symptoms five years.

Examination: Mildly disoriented, loss of memory; general moderate analgesia: marked ataxia; general scaly eczema: Rombergism. Pupils, unequal, Argyll-Robertson. Elbow jerks, knee jerks and wrist jerks all absent.

Three months after beginning of treatment, patient walks fairly well: much stronger. Clear mentally. Cells 7.5.

Case 8. Man, aged thirty-eight, had chancre fifteen years ago. Right eye has been blind for two years following failing vision for ten years: rapid failure of left eye for past six months, with typical tabetic symptoms. Bl. Wass. —; globulin +, cells 30.

Under observation three months with one intravenous and two Swift treatments. Amt. 606 1.4 gm.; amt. serum 50 c.c. 40 per cent. sol. No improvement in eyes. Sp. fl. Wass. —, globulin ±, cells 4.

Case 9. Man, aged thirty-three, had chancre ten years ago. Rapidly developing tabetic symptoms during the past three months: pains in legs, partial loss of control of sphincters, severe gastric disturbance. Pupils passed in three weeks from fairly normal to Argyll-Robertson. Bl. Wass. —: sp. fl. Wass.—, globulin ±, cells 6.

Under observation three months with two Swift treatments. Amt. 606 .9 gm.: amt. serum 55 c.c. 55 per cent. sol.

Pains and gastric disturbances ceased. Bl. Wass. —; sp. fl. Wass. —, globulin —, cells 3.

This case seems to present a sudden arrest of a rapidly progressing cerebrospinal infection

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THE SWIFT-ELLIS TREATMENT OF CEREBROSPINAL SYPHILIS FROM THE LABORATORY STANDPOINT.

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(Read at the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

The Swift-Ellis treatment of syphilis of the central nervous system is primarily a laboratory procedure. Through laboratory studies Swift and Ellis and others discovered the fundamental principles involved, and it is largely, though not entirely, by means of the various laboratory tests that the efficiency of the treatment is estimated and the course of action determined. It is my purpose to outline the laboratory side of the subject, and to tell from my own experience of the significance and value of the various tests. I can not do this without saying something as to the clinical side of the matter.

The treatment is based upon several well-established facts which have been discovered during the past few years. I shall mention these briefly.

1. The so-called parasyphilitic diseases are due to the actual presence of the *Spirochaeta pallida* within the tissues of the central nervous system, and are active syphilitic disease.

2. It has been shown that there is very little excretion of medicinal substances from the blood into the cerebrospinal fluid. So far as I know, no one has ever shown the presence of arsenic in the cerebrospinal fluid after intravenous injection of salvarsan. The desirability of a more direct method of application of the antisyphilitic remedies has long been evident.

3. Attempts to inject salvarsan and neosalvarsan directly into the subarachnoid space even in highly diluted solution have been shown to be dangerous.

4. Plaut demonstrated the fact that the serum of patients who have received salvarsan has a definite antisyphilitic effect, while normal serum has none, and the serum of patients who have had mercury and iodids has very little.

5. Swift and Ellis showed that serum of patients treated intravenously with salvarsan has definite inhibitory action on the growth of the *Treponema pallidum,* and that this power is considerably increased by heating the serum at 56° C. for one half an hour. Such serum obtained about one hour after the intravenous injection is more active than at any other time. These studies led Swift and Ellis to attempt the treatment of syphilis of the central nervous system by the injection of the salvarsanized serum directly into the subarachnoid space. They found clinically almost invariably more or less marked improvement, and also such changes in the various biologic tests as to indicate a genuine checking of the active syphilitic process. Their findings have been generally confirmed. The changes in the biologic tests, being entirely objective, have come to be the essential guide as to the efficiency of the treatment.

The laboratory tests of real value include the Wassermann reaction in the blood, and the Wassermann reaction, cell count and globulin content in the spinal fluid.

My experience with the Wassermann reaction in the blood of patients with syphilis of the central nervous system has coincided in a general way with that of others. In tabes and cerebrospinal syphilis other than paresis the blood Wassermann reaction has been positive in only about fifty per cent. of the cases. In paresis the blood Wassermann has been positive in all undoubted cases and the reaction has been very strong.

Nonne has said that when the blood Wassermann test is negative we may question the correctness of the diagnosis of paresis. It is evident then, that the blood Wassermann test is of the greatest value in patients suspected of paresis. I wish to emphasize the importance of the general recognition by the profession of the fact that in practically fifty per cent. of the cases of cerebrospinal lues and tabes, the blood Wassermann reaction is negative. Ignorance of this has resulted in mistakes, as I can testify from experience, many physicians assuming they have blundered in diagnosis when they receive report of a negative blood Wassermann on patients in whom they suspect syphilitic disease of the central nervous system, and treatment has thus been seriously delayed. On the other hand a positive blood Wassermann test in a patient who has symptoms of disease of the central nervous system does not always mean that the nervous disease is necessarily syphilitic. This, however, rarely leads to mistakes in diagnosis. Too much emphasis can not be placed upon the importance of careful Wassermann technic, for unless properly performed it is worthless and may even be disastrous. I do not wish to discuss the various technical phases of the test; however, I know that trouble has arisen from the fact that the test is sometimes made by persons who have been instructed to perform it in a parrot fashion, without knowledge of its fundamental principles, and without accurate, and constant titration of the various agents employed, which is necessary if the test is to be of any value. I would particularly emphasize the very great importance of actually titrating the complement immediately before each test. Eager to obtain the very highest possible percentage of positive reactions, many individual workers have so sensitized the test as to make it practically too delicate, and many patients have been erroneously labeled syphilitic by such Wassermann reactions.

Studies in my laboratory have shown that complement is appreciably destroyed by a temperature of 37° C. and this occurs with sufficient rapidity to make a one-unit test an exceedingly delicate procedure, and diagnosis of syphilis can not safely be made on it alone. Evidence of a clinical nature is necessary to make such a reaction of any value. The Wassermann test should be so performed that a positive reaction means syphilis, excepting scarlet fever, and a few other diseases, which, however, are not likely to cause confusion. A weak or one-unit test must be interpreted by the clinician.

Spinal fluid examination is of far greater value than the blood Wassermann in the diagnosis and treatment of syphilis of the central nervous system. In my own experience the most constant finding is an increased cell count. Based upon a rather large experience in examinations of spinal fluids from all sorts of cases, my opinion is that very rarely does normal fluid contain as many as five lymphocytes, and usually not more than one or two per cubic millimeter. In over two hundred examinations the lymphocyte count, in cases beyond doubt syphilis of the central nervous system, not more than five times have I found a cell content of less than five per cubic millimeter. A content of over five lymphocytes per cubic millimeter is usually pathologic, and over ten always so. A lymphocyte count in the spinal fluid of more than ten per cubic millimeter has always meant syphilis of the central nervous system, tuberculous meningitis, or acute anterior poliomyelitis. Clinically there is rarely any difficulty in distinguishing the latter conditions from syphilis, so that interpretation of an increased cell count is easy. Low cell count, however, does not exclude syphilis of the brain or spinal cord. In differentiating tabes, paresis, and cerebrospinal lues, I am unable to get any information from the cell count. In other words, increase above normal is common to all, the number of cells present not being characteristic of any one type. The highest count I have seen was in a case of well advanced paresis, which showed 255 lymphocytes per cubic millimeter. The lowest count in undoubted paresis was five. In tabes, counts have ranged from five to seventy-five per cubic millimeter. The best method of making lymphocyte count is that usually recommended, using the Fuchs-Rosenthal Counting-Chamber, and I prefer as a staining fluid, undiluted Unna's polychrome methylene blue, originally recommended by Cornell. Without giving the details of our findings, as that would require too much time, we have found that serious mistakes are likely to result from careless technic in making the cell counts. I wish also to insist that cell counts be made immediately after obtaining the spinal fluid. Our studies show that destruction of lymphocytes takes place even when the fluid is kept at low temperature and the rapidity and extent of this change varies in different specimens so that a delayed count which is negative can not be depended upon.

The second change in the spinal fluid to be considered is the increase in the globulin content. This is usually detected by the butyric acid test of Noguchi or Nonne's phase 1 reaction. The Noguchi reaction in my experience is frequently very difficult to read, and one is often in doubt as to its significance. The reaction in many instances is not definite, and although I have examined many normal spinal fluids I only occasionally see clearly negative reactions. The Nonne reaction has been somewhat more satisfactory in my hands, as the difference between weak positive and negative is sharper. The increase in globulins, provided it is definite, indicates organic disease. However, it has no value as a differential diagnostic point for syphilis, as it is positive in all forms of meningitis, and frequently with brain tumors and some other diseases. The test is of no value in fluids containing even a small number of red blood cells. Increase in serum albumin has the same significance as increase in globulin, and is rather more easily estimated, as the contrast between negative and positive reactions is more distinct.

The Wassermann reaction on the spinal fluid should be made a quantitative test as suggested by Hauptmann. The strongest reactions are found as a rule in paresis. I am in the habit of making the test on spinal fluid with quantities of from .2 of a cubic centimeter up to 1 c.c. In nearly all cases of paresis examined the reaction has been strongly positive with as little as .2 of a c.c. of spinal fluid, and in some with only .05 of a c.c. All these tests are made with two units of complement. In tabes I have seldom found the Wassermann positive with less than .4 of a c.c. of spinal fluid, but nearly all are positive with .8 or 1 c.c. In cerebrospinal lues the test may be entirely negative, but this is rarely so. In all but very few cases the reaction has been positive with .8 c.c. or 1 c.c. of spinal fluid. Comparatively few, without clinical evidence of paresis, show a very strong reaction. A very strong reaction with a small quantity of spinal fluid must be regarded as at least suspicious of paresis.

In the practical application of the Swift-Ellis treatment a study of the laboratory findings is of as much importance as the study of the clinical symptoms, for by these tests the results of the treatment on the pathologic process may be followed with a certain degree of accuracy. So long as any of these tests are positive the patient must be regarded as uncured.

The treatment has rarely failed to produce a marked reduction in the number of lymphocytes in the spinal fluid. This reduction has varied from a few per cent. to more than seventy-five per cent. of the number originally present. The Wassermann reaction and globulin tests disappear more slowly than the lymphocytes. In a number of cases of tabes and cerebrospinal lues the Wassermann reaction has become entirely negative. In undoubted paresis I have no record of its disappearing, but have seen it weaken. Further treatment will probably continue this improvement. The globulin test has disappeared entirely in only a few cases (tabes and cerebrospinal lues). Clinical improvement has been more constant, and has not always been associated with corresponding improvement in the various tests. Most marked clinical improvement has followed first injections, subsequent ones usually not showing such striking results. Improvement in laboratory findings goes on after clinical improvement has reached its highest point. Whether any of these changes are permanent can be determined only by observing the patients much longer than has yet been possible. Clinical and laboratory relapses have been observed, but seldom has the ground gained been entirely lost. Sometimes the laboratory tests have reappeared without clinical relapses. There is much evidence to show that decided improvement in these patients may follow intravenous injections of salvarsan alone. The improvement in the laboratory findings in the spinal fluid after such treatment has always been only a reduction in the cell count. The other tests have not been improved. I have often seen similar reduction in the number of lymphocytes on making a second examination when there has been no treatment at all. Experience has demonstrated to my own satisfaction that the Swift-Ellis method is a distinct advance in the treatment of syphilis. As to the relative importance of clinical and laboratory methods of diagnosing syphilis of the central nervous system, I can see no possibility of comparison. Each is part of a whole and after all diagnosis must be the result of a process of reasoning, based on all the evidence obtainable. This evidence may be subjective or objective. Laboratory findings are objective evidence. It is sometimes conclusive, rarely entirely absent, and if properly gathered should never be misleading. Clinical evidence is both subjective and objective, and is quite as valuable, but must be just as carefully tested. Clinical studies must ever precede, suggest and determine the true value of the various laboratory diagnostic procedures.

DISCUSSION.

ON PAPERS OF DRS. WALKER, WHOLEY AND WILLETTS.

Dr. William Egbert Robertson, Philadelphia: I thoroughly agree with Dr. Willetts that his subject is such an enormous one as to defy satisfactory discussion in the small time allotted, whether from the clinical or laboratory standpoint. The paper of Dr. Walker dealt especially with the diagnosis of lues. The diagnosis remains not in the hands of the laboratory man solely, as Dr. Willetts suggested, nor in the hands of the specialist or neurologist, but primarily it is the duty of the practicing physician to recognize syphilis. I thoroughly believe if syphilis were recognized in its earlier phases that the more serious manifestations would not arise, or at most very rarely under the combined methods of treatment that we now possess. Until the newer organic arsenic preparations were introduced I followed the general plan; namely to use mercury in its various forms followed by iodids. The patients were all carefully watched, accurate notes kept and all treated from two to four years. With the advent of the Wassermann diagnostic test I wrote to all the patients I had seen in the course of a number of years, asking them to present themselves for observation. All of those whom I was able to trace were subjected to laboratory study. In every instance the serum was examined and in some instances the spinal fluid also. Fifty per cent. of the twenty cases thus traced (others written to failed to respond) were positive, but only two showed distinct clinical evidence. These two were incipient tabetics, one with Argyll-Robertson pupils, lightning pains, absent knee jerks, marked loss of flesh and that symptom so common in tabetics, an inability to keep warm; the other merely presented absent knee jerks with some pain in the legs without pupillary rigidity. A various number of years had elapsed since these cases had been treated. So that again indubitable proof is furnished that cases may be latent for years without gross manifestations and yet more careful clinical study may show phenomena which are susceptible to further proof by laboratory findings. The recognition of the fact that syphilis is essentially a septicemia in its early stages has been abundantly confirmed. The following is a quotation from a paper by Dr. Klauder and myself before the last meeting of the American Medical Association in Atlantic City:—

"Though they may not present a single symptom, the treponemas invade all parts of the body within a day or two at most from the time of infection. Neisser succeeded in inoculating animals with blood taken from monkeys five days after the original infection and with splenic pulp taken on the twelfth day. Hoffman has shown that monkeys may be infected by using the blood from a human in the secondary stage, and that under such circumstances the incubation stage in the monkey is shortened. Flügel recovered the treponema from the blood of a woman with a secondary, maculopapular eruption. Indeed, it is probable that the eruption is in the nature of a parasitic embolism similar to the rose spots of typhoid fever, which are mycotic, congested, capillary loops. Veillon and Girard selected a typical maculopapule and excised it on the third day after it appeared. The capillaries were dilated and congested with an early, perivascular, lymphocytic infiltration and treponemas were found by the silver method in and about the capillaries. Many observers have since found the parasite in tertiary lesions of the skin and various organs, including the nervous tissue, either by direct staining methods or by inoculation into animals." In view of these facts it is only to be expected that very early involvement of the nervous system occurs, an involvement which does not become manifest clinically for some years in most instances, though Gowers, in cases called by him precocious types, states that nervous phenomena may occur in the course of a few months. A striking instance of this type was recently furnished by Gregory and Karpas of a case of cerebral syphilis occurring six months after the development of the primary lesion. Another fact often lost sight of and first recorded by Jonathan Hutchinson is the following. If infection occur as a result of a punctured wound, as is not unfrequently the case with a doctor or nurse, no primary lesion develops, the first manifestation being the secondaries. The absence of a primary lesion, therefore, does not negative syphilis. Now as to the proper method of handling these cases: that is, especially referring to forms of the disease involving the nervous system. Shall the intensive intravenous method or the combined intravenous and Swift-Ellis methods be employed? I think it may be stated with justice that if the disease were recognized early and properly treated by the combined use of salvarsan and mercury, the later and seriously destructive forms of the disease now relatively common among us, would be very rare. In cases which have progressed, however, best results are obtained by the use of salvaran intravenously, neosalvarsan intramuscularly, salicylate of mercury hypodermatically and the employment of salvarsanized serum.

Dr. Willetts said that arsenic had never been found in the subdural fluid. I recall a paper by Sicard in which he claims to have found it after an intravenous injection, and several other references of a similar nature are extant. I have searched for it many times but have never found it, though in all cases it was some time after the injection had been made. It is conceivable that when arsenic is not found in the spinal fluid after an intravenous injection, it is due to the ravages of the disease in producing an inflammatory exudate in the choroid plexuses and velum interpositum, so that filtration or secretion is interfered with. We have employed subdural injections direct without previous intravenous injection as well as the Swift-Ellis method. Salvarsan should never be employed directly as it is too irritating; neosalvarsan, however, produces no irritation when injected in proper dose into the subdural space. To arrive at the approximate dosage of neosalvarsan given subdurally, only 12 c.c. of a 40 per cent. solution are employed after an intravenous injection of 9 decigrams, we took the figures of Bischoff who found the total volume of blood in the bodies of two executed criminals to be 7.1 per cent. and 7.7 per cent. respectively; thus to a patient weighing 150 pounds, each cubic centimeter of blood would contain about 0.00017 mg., and 12 c.c. about 0.002 mg. We endeavored to determine whether all of the arsenic was taken up by the serum or whether some was present in the cells of the blood, but in this we failed. Using the Abelen reaction for the determination of arsenic, we found that in many instances no trace could be found in the blood removed from the arm one hour after the intravenous injection in some instances; in other cases a little longer. This led us, therefore, to withdraw the blood to be used in the preparation of the subdural injection in from thirty to forty-five minutes following the intravenous injection. We have given subdural solutions varying from 40 to 60 per cent. and in amount from 20 to 40 c.c. after withdrawing 15 to 20 c.c. of spinal fluid. We have given directly, without previous intravenous injection, from 2 mg. to 2cg. of neosalvarsan both in salt solution and in the patient's inactivated serum. The larger doses were extremely irritating and produced serious after effects. In our later work we have modified the Swift-Ellis method, employing a definite dosage of arsenic added to the patient's inactivated serum removed before an intravenous injection was given. An additional advantage in this plan is that patient's serum can be inactivated while the intravenous injection is being given and the entire treatment carried out at one sitting, so to speak, instead of some hours or a day later, as in the case of the original Swift-Ellis method. Swift and Ellis in one of their earlier papers showed that the salvarsanized serum has a restraining influence on the growth of treponemas. However, it may be less the contained arsenic which is responsible for any betterment that follows a subdural injection than the stimulating influence of the injected fluid and probable resulting influx of blood with later absorption of some of the inflammatory exudate.

We are by no means convinced that the subdural method of treatment has demonstrated its utility. Where the degenerative stages are far advanced it seems scarcely likely that any plan of treatment will bring about absorption of the exudate and restore damaged nerve fibers, and in cases less advanced it seems likely that intramuscular injections of small doses continued over a long period together with the hypodermatic use of mercury will yield results when any result is to be hoped for at all. Dr. Willetts, I believe, made an observation with respect to the Wassermann reaction which deserves strong endorsement. In the paper by Dr. Klauder and myself we made a similar comment, and that is that when a laboratory report of a Wassermann reaction is made, the method employed should be stated together with the antigen used and the complementary strength.

Dr. Edward E. Mayer, Pittsburgh: Reports and discussions concerning syphilis of the brain and cord must never ignore the remissions, amounting often to apparent health, and also the changeability of symptoms which always have marked its course. Nor must we forget that the autopsy table is often the only certain criterion of the presence or absence of so-called paresis. With this view point, though recognizing the potency of salvarsan and neosalvarsan, I am not yet ready to accept as conclusive the immature reports concerning a special method like the Swift-Ellis treatment. In any given case, it is not yet certain how much more effect has been obtained than had the intravenous injection alone been administered. If more, is it the serum itself or the minute quantity of salvarsan? Does it really bathe the ventricles and plexus? Is it more efficacious than are intraspinal injections of the drug itself? To what extent is the permeability of the meninges a factor in considering the proper method and can we, through ammonium sulphate reactions, percentile albumin content, etc., ascertain this? Is the reduction of cells in the cerebrospinal fluid after intrathecal injections of salvanarized serum as lasting or more lasting than if obtained otherwise? Can we correlate these changes and the apparent clinical recoveries? I have seen a reduction in cell count after a lumbar operation alone.

I do not question the observations reported. That two hours after an intraspinal injection the drug has been found in the ventricular fluid is significant.

On the other hand Esquchen in the *Munchener medizinische Wochenschrift* reports that the colloidal (Lange) reaction is not altered after Swift-Ellis treatments. In addition the experiments of Tinel and Leroide (Comp. Rend de la Soc. de Biol., 74, 1073) seem to show that normal meninges are impermeable for arsenic, but in the presence of an inflammatory process become permeable. This conclusion is important in view of Swift and Ellis basing their use of the salvarsanized serum upon their experimental conclusion that salvarsan and neosalvarsan directly injected (monkey) are irritative and produce an increase of cells (*Jour. of Exp. Med.*, 18, 428). The first named observers confirm what has been reported by several, namely, that nucleinic acid and sodium nucleinate produce at least a temporary beneficent action on paresis. They claim that this is due to their lighting up the inflammatory meningeal condition and rendering the meninges permeable to other medicaments. Weil and Kafka have described a hemolysin reaction which is dependent upon this meningeal permeability and which they claim will help in differentiating paresis and the acute meningitides. I have tried Ravaut's hypertonic solution of neosalvarsan in distilled water with no untoward results and even clinical recoveries. With this too, however, I am still reserving an opinion. I subscribe to the following: (1) Concentrated intravenous injections of salvarsan or neosalvarsan; (2) these injections to be repeated twelve or fifteen times at weekly intervals; (3) every third or fourth treatment may be combined with an intrathecal one; (4) continuous use of nuclein (this is most important); (5) interval usage of mercury, by inunctions preferably and by a good rubber, or by hypodermic injections; (6) direct control of patient at a hospital with constant clinical observation. Lastly, I wish to call attention to Giemsa's arsalyt, which it is claimed is superior to salvarsan. Of it, however, personally I know nothing except from the reports in German literature concerning its use.

Dr. Tom A. Williams, Washington, D. C.: The pathology of tabes was shown by Najeotte in 1894 to be a granulomatous radiculitis years before the discovery of the *Treponema pallidum* and therefore not para nor meta but syphilitic. "The pathogenesis of Tabes" (*Amer. Jour. Med. Sciences*) in 1908 attempted to show to the American medical profession the facts upon which they could base its treatment, which I have been conducting successfully since coming to Washington in 1907. I tell this so as not to be accused of reactionarism in what I shall say.

It has not been shown that intrathecal injections by the Swift-Ellis method are superior to intensive treatment by other channels. For instance, Sachs and Strauss reported to the American Neurological Society, 137 cases treated within four years with almost uniform success. Upwards of 60 cases following my recommendation have been treated with complete disappearance of pain and relief or disappearance of ataxia, according to the intensity and duration of the disease. Babinski and Abadie in France had been using mercury intravenously with some success years before salvarsan was introduced. Since then Sicard, Ravaut and others have corroborated them. Since salvarsan, numerous German observers reported numbers of successfully treated neurological syphilides.

Two of my own cases exemplify the kind of result obtained.

A lawyer from Pennsylvania had had pains treated as rheumatic for six years; latterly, these had increased and some numbness and unsteadiness in gait and mictional difficulty had supervened. His left eye and ear too were losing function. When he was referred to me, I found the left patellar and Achilles reflexes absent; the left pupil dilated, irregular and paretic to light, the pain sense dull and delayed in the lower limbs and thorax, tremor of the tongue, slight slow nystagmus; slowed diadokokinesis, a stamping and occasionally uncertain gait, with left Romberg; the Wassermann reaction was negative, but in the cerebrospinal fluid was found 38 cells per centimeter and an increase of protein. He was given four injections of mercury and two of salvarsan. At first the pains were increased, but they quickly ceased. Forty days after, there were only 13 cells per cm. in the spinal fluid; five months later, the diadokokinesis was normal, the gait was improved, there was less tongue tremor and no nystagmus, the sensibility except in the left tibia had returned, although the left pupil had remained paretic; but the pains, having returned, were quickly dissipated by salvarsan: and he was urged not to neglect the inunctions as he had done. The following year he again returned for examination and only 9 cells per cm. were found in the fluid. Although he had practically no further trouble he was again given salvarsan twice. It is now two years and a half since he was first seen and he remains quite well without any ataxia.

Two years ago, I saw a woman from West Virginia who had been treated six years for rheumatism at Clifton Springs and other places. She showed great loss of weight and strength, marked taxia, almost complete loss of pain, vibration and attitude sense of the lower limbs, as well as loss of the tendon and pupil reflexes. She was recommended salvarsan and mercury, against the opposition of several physicians. I saw this patient only a few weeks ago; and although she has had only four periods of treatment of two salvarsans and from four to six weeks of mercurial injection in each, she is perfectly well and at normal weight, save for the lost reflexes and a slight sensory loss in the tibial border of the feet, and can work with enjoyment again.

Benedict analyzed twenty samples of serum obtained for Swift-Ellis treatment after the injection of salvarsan; only in two did he find a faintest trace of arsenic. Therefore we can exclude an arsenic effect in the discussion of the manner of action of intrathecal injection of serum. Besides this, this serum produces no improvement unless salvarsan is introduced into the blood also; and normal serum is declared to have no particular effect. On the other hand, arsenic has been found in the cerebral ventricles after intravenous injections of arsenobenzol.

The disease process is not confined to the surface of the meninges; indeed it is most marked around the blood vessels, many of which are deeply situated. The tissues around these are nourished from them and not from the cerebrospinal fluid. But foreign substance in the thecal sac may irritate the pia-arachnoid, thereby inducing hyperemia of the meninges, the increased exudation from the vessels of which, of serum laden with arsenic from the preceding intravenous injection, is the explanation, if there is any advantage at all in the method of Swift-Ellis. Sicard and Ravaut indeed have been using injections of weak salts of mercury and magnesium along with mercury intravenously with some success, whether with greater success than by administration through the blood alone only a large number of observations can show after much time.

It must be remembered that all the cases which have shown improvement after being treated intrathecally have received intravenous treatment as well, and most of them large amounts frequently repeated. It is to this latter that we must attribute by far the most of the improvement of such cases.

Dr. H. W. Mitchell, Warren: In the three minutes allotted for discussion I desire to recapitulate the results of some therapeutic and diagnostic observations conducted during the last two years at the Warren State Hospital for the Insane. The Swift-Ellis treatment was begun by the hospital physicians nearly two years ago, and at some later time a report upon the value of the treatment in our cases from a therapeutic standpoint will be presented. We have felt that, in the cases of paresis with which we have had to do almost entirely, a prolonged period of observation was needed before one could speak definitely concerning the outcome of the disease in the patients treated. Without going further into this phase of the question at the present time, I can say that our observations are such as to raise grave doubts concerning the value of this treatment in well-advanced paretics, and that the greatest value of the Swift-Ellis, or any other treatment, must be obtained in the early stages of the disease, practically before patients are so far unbalanced as to require hospital commitment. Such early recognition of cases will be possible only when syphilitics are followed more carefully by the physicians treating the initial infection.

The preliminary reports of others using the Swift-Ellis treatment lay much stress upon the reduction of cell counts, and changes in the globulin and Wassermann reactions of the cerebrospinal fluid, and the reduced cell count was usually taken to indicate an improvement. We found such varying results in our treated cases that, in order to check them, some 300 counts were made at two-week intervals upon thirty-five untreated cases of paresis in all stages of the disease. The counting was done most carefully under identical conditions, taking the same amount of fluid at each time and counting five drops of each specimen, using the average as a result. We found a striking variation in cell count was demonstrated, and it occurs in nearly all our cases; the jump from a normal to a high lymphocyte count often being noted without change in mental state within the two-week interval. Normal count was frequently found in the far-advanced and rapidly deteriorating cases, and as a result of these observations we can not believe that a low count, or a succession of low counts at any state of the disease is of any great significance, or that it necessarily follows as a result of treatment.

The Wassermann tests on the blood showed considerable variation, but was found positive on one or more occasions in practically all of our paretics. The Wassermann tests on the fluid were much more constant and were rarely negative, while the globulin test showed widest variation. We have now had considerable experience with the collodial gold test, which has not been mentioned here today. In our hands it has justified the opinion expressed by Dr. Myer, of the Phipps Psychiatric Clinic, who last spring presented a paper stating that it was in his judgment the most delicate test obtainable for detecting cerebrospinal syphilis, and we should from our present knowledge coincide with his opinion.

It is well to remember that in the diagnosis of early cases, normal cell count, negative reaction of blood and fluid, at any one time, do not finally exclude the possibility of cerebrospinal syphilis, and that repeated examinations should be made before giving final opinion.

While our work among the advanced paretics and patients usually committed to an insane hospital represents largely work in the end stages of cerebrospinal syphilis, yet such work has its medical value, and its place in the medical contributions, and gives us definite concrete problems for the stimulation of medical activity in the insane hospital service, and one that is of interest to the entire medical profession.

Dr. Walker, closing: It is to be expected that in this, as in other medical questions, opinions will vary in accordance with observations based upon differing experiences. In no class of cases is there greater need for detailed, exact and continuous observations, both clinical and laboratory; and these should be weighed and checked with the greatest care. In our series we have had opportunity to make comparison in many cases, with the results obtained by the older methods (mercury and the iodids) in the same cases, checking them with both serological and clinical findings. It has been gratifying to find that our results are in keeping with those obtained by others working in this field. There are, of course, many problems connected with cerebrospinal lues yet to be settled. We feel, however, that the results attained by the Swift-Ellis method of treatment are so much more satisfactory than by any other treatment yet devised that we shall go on.

Dr. Wholey, closing: As to Dr. Mayer's interpretation of the chart, I am sorry I failed to avoid such a mistinterpretation. The chart is entirely clear. I shall reëxplain. The fact is that the count remained stationary or rose under intravenous treatment. We get a decided drop from 67 to 20 with an intraspinous injection. A month elapsed and the count remained stationary in spite of an intravenous injection during this interval. An intraspinous injection was given and there was a big drop. Then the patient went without intraspinous treatment for two months; his cells rose to 79 though an intravenous injection was given during the interval. Under the intraspinous treatment at the end of the two months, the cells immediately dropped to 27. These findings show a great difference in reaction between intravenous alone and intraspinous treatments. If cell increase means nothing in inflammations about the cord, we can not reasonably say that leukocytosis means anything anywhere. This report is upon a marked case of tabes so far advanced that one could not expect results from other methods of treatment; clinically the improvement was striking. In regard to the Swift treatment I can only emphasize what Dr. Walker has said, that there are numerous enthusiastic workers in the field who have proved the method; they offer facts, not fancies such as have been injected into this discussion. The records of such men as Fordyce, Collins and McCloskey are convincing. If treatment with other methods is superior or equal, why do these advocates of other treatments put out no records? I have failed to find any results comparable to those obtained by the salvarsan method.

Dr. Willetts, closing: It is true I have found and mentioned in the paper that on making repeated lumbar puncture and examining the fluid we found variations in the cell count and many phases can not be discussed at one meeting. There are explanations which can be offered which have not as yet been offered. We have shown conclusively, in taking the spinal fluid as is done in the intravenous treatment, that five cubic centimeters may be taken for test of fluid, and the cell count made. If you continue taking five more and five more you will not find so many cells per cubic millimeter in the five cubic centimeters. The first fluid contains more cells per cubic millimeter than the rest. The colloidal gold test I did not mention because my experience has been limited and not satisfactory. The men here do not agree in opinion on this matter, but while the figures may lie in a sense, yet we have plenty of them and I have yet to see such reductions in the varied laboratory tests from continued mercury and continued salvarsan treatments. It is strange for patients, as I have seen them, to have the pains of tabes continue for years and we find these very cell counts that you see. I find the highest ones in people treated with mercury for many years. The matter certainly is not yet settled, it seems to me. There is no question that there has been a distinct advance made in the treatment of cerebrospinal syphilis by the Swift-Ellis treatment in using the salvarsan serum, no matter what it is in the serum that accomplishes this.

POISONERS OF PUBLIC HEALTH.

Six hundred thousand people die each year in the United States whose lives might have been saved by prompt or proper treatment. An equal number may be set down to represent the victims of avoidable invalidism. These conditions are largely due to the criminal activity of the patent medicine industry. Surely, in view of these attested figures, it may be said safely that there is no more important question before American citizenship to-day than ways and means of crushing this criminal traffic in human life and happiness.

It is not alone that the ghoulish business preys so savagely on credulity and despair, robbing the sick of treasured savings, aiding the progress of disease, tormenting with false hopes, making rickety children and filling graves with wretched gulls. Indictment enough, but it is only one phase of a degrading and corruptive process.

The patent medicine poisoners, through the millions spent in advertising, have injected a new note of venality into the newspaper situation, and with this hired publicity as a medium, are exercising a sinister control over those public servants who make, enforce and interpret our laws.

The Food and Drugs act, passed in 1906, has had its teeth drawn one by one, until now it has about as much bite as a canton flannel dog. Dr. Harvey Wiley, head of the Bureau of Chemistry, tried to make the law do some of the things that were intended, and it may be remembered that the food adulterators and drug poisoners were sufficiently powerful to gain the support of the Department of Agriculture and the President of the United States in securing Dr. Wiley's discharge.

The Supreme Court of the United States, probably out of that strict regard for property rights which is so distinguishing a characteristic of American jurisprudence, has also contributed a decision that hamstrung an already wobbling law. It held that the Food and Drugs Act does not apply to statements, false or otherwise, regarding the curative effects of medicinal preparations, but that it governs only misstatements regarding composition or place of manufacture.

In plain words, nothing can be done to the baby soothing syrup fakers for selling their mixture of morphin and alcohol to ignorant mothers and careless nurses unless they lie about the amount of alcohol or morphin, or suppress the true place of manufacture. With all due respect to the high tribunal of the land, this decision must be regarded as a first aid to fraud and murder.

As a further proof of the power of blood money, when massed in quantity, there may be cited the increasingly successful resistance to necessary and intelligent medical legislation. For several years Senator Owen, of Oklahoma, has been trying to bring about the creation of a Department of Public Health. All that his bill contemplates is the unification of the various federal agencies affecting the public health, so that these activities may be stripped of confused and duplicated effort, and given certainty and projectile force.

The patent medicine poisoners want confusion, indirection and uncertainty. Therefore we have seen the formation of a body called the National League for Medical Freedom, with organizers in every state, page advertisements in great dailies, and a powerful lobby in Washington. The very personnel of the original organizers of the league proves it to be the work largely of those choice scoundrels who have been most exposed as frauds and charlatans, who have been able to get a large body of sincere enthusiasts to work with them, and yet such is their strength that they have succeeded in blocking not only the Owen bill, but other important health legislation. Its lobbies are maintained in state capitals, as well as in Washington, and there can be no just estimate of the harm that this opposition has done.

To-day the Food and Drugs act is almost a joke. It writes down a list of things alcohol, morphin, opium, cocain, hasheesh, acetanilid and a few others—and rules that preparations containing these substances shall so state on the label. Not in any respect does it forbid the sale of admitted poisons or patent swindles, and when the manufacturer has complied with the label requirement, the kindly government, permits him to cover up the label with a legend, "Guaranteed Under the Food and Drugs Act." To an unsuspecting public, this guarantee seems to cover the medicine's claims to curative properties, and so the law has really helped the swindlers.

The fight against the poisoners, then, is not only a fight for physical health, but also for political health. The industry is a cancer that sends its filaments into every department of American activity. A "crusade" is not the thing. We have had crusades, and after the excitement died down, the evil was found to be even more impregnably intrenched in a new position. When Samuel Hopkins Adams, writing for Collier's in 1905 and 1906, tore the mask from quacks and quackery, it did not seem that the fraud could survive his terrific exposures. Yet it did.

The Postoffice Department, by denying the use of the mails through the issuance of fraud orders, has done away with a number of notorious scoundrels who had been preying on the wretched for years. Among those who were cast into the outer darkness may be mentioned Rupert Wells, the cancer cure faker of St. Louis who made a specialty of advertising in religious papers; the Chamlees of St. Louis and Los Angeles, who claimed to cure cancer with "an island plant"; the Curry Cancer cure of Lebanon, Ohio, which worked with cocain and opium; the Bye family, those "balmy oil" vultures; the Toxo-Absorbent Cancer cure, and the Drs. Mixer cancer fakes.

The passing of these sordid rascals, however, made no more than a ripple on the surface of fraud. For every one that has been put out of business, a score has arisen to take the vacant places.

In 1905, Mr. Adams estimated that American people spent $75,000,000 a year on patent medicines. In 1908, the British Medical Association attempted a similar estimate with regard to England. Great Britain requires every proprietary medicine to carry a stamp, and from the revenues derived, the sum of $15,000,000 was reached as the amount spent annually on nostrums by the British public. Nothing is more safe to say than that the annual toll taken by the poisoners in the United States is more than fifty millions, to put it at its most conservative figure.

Every cent of this staggering total is worse than wasted. A large percentage of the patent medicines contains alcohol or some insidious drug, the wretched victims waking from their dream of health to find themselves shattered in body and slaves to some vile habit. When not actually menacing, the medicines are so entirely worthless as to be laughable were it not for the criminal greed behind them and the ills that they aggravate.

Practically all of the catarrh cures put their dependence upon cocain, the "baby soothers" rely on opium or morphin, the headache cures are based on the deadly acetanilid, and the "tonics" are made up of very cheap "booze" that puts many an ardent temperance advocate on the road to dipsomania. In the list of arrant swindles may be mentioned perfumed vaselin as a cure for blindness, sugar and salt and water as a sovereign remedy for consumpsumption, laxative pills for deafness, sugar of milk for tumors, vaselin and witch-hazel for cancer, electric belts for impaired virility, etc., etc.

Those who are well and strong can not possibly come to any exact appreciation of the real horror of the patent medicine evil, for they are unable to understand the dethronement of intelligence that comes with sickness; the pitiful, desperate nature of the average quest for health. Educated and illiterate alike fall victims to the passion of hope that is excited by the glowing promises of the patent medicine advertisement.

The intent to deceive and to cheat runs its scaly length through the whole industry. It is the ghastliest of lies, the cruelest of swindles, a vicious and calculated murder of the public health. The newspapers that accept the advertisements know this, officeholders who protect the industry know it, the smooth, heartless knaves behind the frauds know it, and the United States government knows it best of all.

This is proved by the action of the Department of Agriculture in deciding that after November 1, 1916, the guarantee of the Food and Drugs act shall not be used on any label whatsoever.

An even greater proof is afforded by the action of the United States government in the Philippine Islands, for under a ruling adopted in 1914, patent medicines are practically barred from our Pacific possessions.

Should Congress put this law into effect in the United States, the patent medicine industry would not endure a year or even a month. Its secrecy would be destroyed and its lying advertisements eliminated, and without these two aids to successful fraud they could not sell a package.

These Philippine regulations are what the people of the United States must have. It is the ideal law and the goal to which all effort must be directed. In the meantime, while pressure is concentrating on Congress, there is work that the cities may do.

In New York to-day, by way of example, Dr. S. S. Goldwater has discovered a simple and effective means of attacking the patent medicine poisoners. This is the order which he has devised and which has all the binding effect of a law:—

> No proprietary or patent medicine manufactured, prepared, or intended, for internal human use, shall be held, offered for sale, sold or given away, in the City of New York until the following requirements shall, in each instance, have been met.
>
> The names of the ingredients of every such medicine shall be registered in the Department of Health in such manner as the Regulations of the Department of Health may prescribe.
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> The expression "proprietary or patent medicine," for the purposes of this section, shall be taken to mean and include every medicine or medicinal compound manufactured, prepared, or intended, for internal human use, the name, composition, or definition of which is not to be found in the United States Pharmacopeia or National Formulary, or which does not bear the name of each ingredient conspicuously, clearly, and legibly set forth, in English, on the outside of each bottle, box or package, in which the said medicine or medicinal compound, is held, offered for sale, sold or given away.
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> The provisions of this section shall not, however, apply to any medicine or medicinal compound sold or given away upon the written prescription of a duly licensed physician, provided that such medicine or medicinal compound, be sold or given away to or for the use of the person for whom it shall have been prescribed and provided, also, that the said prescription shall have been filed at the establishment or place where such medicine or medicinal compound, is sold or given away, in chronological order according to the date of the receipt of such prescription at such establishment or place.
>
> Every such prescription shall remain so filed for a period of five years.

Innocent enough, seemingly, and yet were lyddite dropped in their midst it could not create more terror in the patent medicine camp than that order. To explain, all patent medicines must register their formulas in the Department of Health unless the manufacturers set forth the contents in plain English on each package.

Now the Department of Health operates a very efficient bureau of chemistry. When formulas are registered, Dr. Goldwater's chemist will look them over to see just what they are and what they are good for. If formulas are not registered, but contents set forth on the labels, the chemists will have such packages purchased and subjected to the same tests as the formulas. In either event, fraud can be determined, and the Department of Health has all necessary power to order arrest and command prosecution.

What Dr. Goldwater has done can be copied by the health commissioner in any city with an equal amount of public spirit and moral courage.

It may be urged that the smaller communities can not afford to maintain a department of chemistry. In such case, the health commissioner will need only to write to Dr. Goldwater, to the United States Department of Public Health in Washington. or to the Council on Pharmacy and Chemistry of the American Medical Association in Chicago, and full reports on every patent medicine will be forthcoming.

This, then, is the task of the cities. It is, of course, a somewhat involved and very tedious attack, but it will serve while public opinion is at work on Congress. First and foremost, the Owen bill should be passed in order that one central Department of Health may do for human beings what the Department of Agriculture now does for cattle and crops.

Then the passage of the Philippines law, putting an end to lies and swindles, and along with this such new activity in the Postoffice Department as will close the mails to manufacturers and newspapers who utter false and misleading statements with regard to any remedy.

Such, in brief, is a tentative outline of campaign. George Creel, *Harper's Weekly*, Jan. 2, 1915.

REPORTING TO MEDICAL CLUB PATIENT AS SLOW PAY.

(McDonald *vs.* Lee (Pa.), 91 Atl. R. 135.)

The Supreme Court of Pennsylvania affirms a judgment on a verdict directed for the defendant, a physician, who sued for damages for an alleged libel. The court says that it appeared from the record that a number of physicians in Carlisle determined to prepare, for their own use, a list of the names of patients who were slow in making payment for medical services rendered to them. The information was for the benefit of the members of the medical association only, and there was no understanding between them that professional services should be refused to those whose names appeared on the list. The defendant was a member of the association, and she furnished to the secretary, among other names of persons whom she regarded as able to pay, but who were slow in making payments for services, the name of the plaintiff. The list of names thus reported as slow pay was printed by the association, with the number of the physician who furnished the name added. There was nothing on the face of the publication to indicate its purpose, and no one but a member could understand its meaning. The publication was considered confidential, and was limited to the members of the medical association. In the plaintiff's statement of claim there was no averment of any special damage to the plaintiff resulting from the publication, nor was there any proof of such damage. On the trial, at the close of the testimony, the judge gave binding instructions in favor of the defendant, on the ground that the communication was a privileged one, and there was no evidence of malice, nor was any special damage shown. The alleged libel was a communication made in confidence to and for the exclusive use of the members of the Carlisle Medical Club. It had reference only to the manner in which the plaintiff made payment for services rendered. It did not appear that, by reason of the report, credit was refused to the plaintiff, or that any member of the association refused to serve him in a professional way.

It was the duty of the trial court to determine whether or not the words used were libelous *per se*, or in and of themselves. If they were not, then, in the absence of special damage, binding instructions were proper. The Supreme Court can see no sufficient ground for holding the publication to be libelous *per se*, or in and of itself. If it became actionable by reason of some special damage occasioned thereby, that fact should have been alleged in the declaration, and proof thereof should have been offered on the trial. It was shown that the words used with respect to the plaintiff did not go beyond imputing to him slowness in the payment of his bills, and under the evidence it could hardly be claimed that he was prompt in the discharge of that duty. The accusation was not so serious in its character as to be fairly regarded as in itself libelous, and, if any injury was occasioned to the plaintiff thereby, it did not appear from the testimony. The good faith of the defendant in making ing the communication was not questioned. She had an interest in the subject matter, and the communication was made to persons having a corresponding interest in the subject. In none of the assignments of error does the Supreme Court find anything of substantial merit or that would warrant a reversal of the judgment for the defendant.—*Jour. A. M. A.*, Jan. 16, 1915.

PROPAGANDA FOR REFORM.

Celerina and Aletris Cordial (Rio Chemical Co.). Celerina is a shot-gun mixture said to contain, in addition to 42 per cent. of alcohol, kola, viburnum, celery, cypripedium, xanthoxylum and aromatics. Aletris cordial is said to contain 28 per cent. alcohol (more than is found in wine) besides three obsolete and valueless drugs, aletris, helonias and scrophularia. Whatever virtue there is in celerina and aletris cordial is derived from the alcohol (*Jour. A. M. A.*, Oct. 17, 1914, p. 1411).

Use of Paraffin Oil. While it is recognized that cancer may be caused by chronic irritation, the paraffin oil used medicinally is bland and nonirritating and there is no reason to suppose that its continued use would cause cancer. A good quality of oil may be obtained by prescribing *paraffinum liquidum* or *petrolatum liquidum grave* (*Jour. A. M. A.*, Oct. 17, 1914, p. 1411).

Ginseng. Despite the fact that the peculiar man-shaped root of ginseng has no medicinal value so far as science can determine, the Koreans for decades paid their tribute to China in ginseng. In China it is reported as a cure for all ills that human flesh is heir to and has a special reputation as an aphrodisiac. Perhaps there is no better illustration of the virtues of aphrodisiacs in general than the fact that the Chinese are quite sure of the marvelous efficacy of ginseng though no evidence of its virtues can be obtained in the West (*Jour. A. M. A.*, Oct. 24, 1914, p. 1486).

Eckman's Alterative. Eckman's Alterative is a "consumption cure" patent medicine consisting essentially of alcohol, calcium chlorid and cloves. Now the Eckman concern is running a series of advertisements in which medical writings on the use of calcium in tuberculosis are twisted into recommendations for the nostrum (*Jour. A. M. A.*, Nov. 7, 1914, p. 1686).

The Friedmann Treatment. An investigation made by the U. S. Public Health Service of the validity of the claims made for the Friedmann treatment of tuberculosis is a complete refutation of Dr. Friedmann's claims, not only as to having developed a specific cure for tuberculosis but also as regards the harmlessness of the treatment. The report of the investigation shows the flimsy evidence on which the Friedmann method for the treatment of tuberculosis was based (*Jour. A. M. A.*, Nov. 7, 1914, p. 1673 and 1690).

The Action of Iodids on Blood Vessels and Heart. The iodids, especially potassium iodid, have been credited with having a blood pressure lowering action and have been used extensively in the treatment of arteriosclerosis. D. I. Macht has demonstrated that the iodid ion, instead of depressing the heart and vessels, has a marked stimulating action and that if potassium iodid lowers blood pressure it must be the effect of the potassium part of the compound (*Jour. A. M. A.*, Nov. 14, 1914, p. 1767).

Agar-lac. Agar-lac, sold by E. Fougera and Company, is stated to be composed of "Agar-agar with lactic ferments, grs. 4½, phenolphthalein, grs.

½." Regarding the "lactic ferment," the expert of the Council on Pharmacy and Chemistry reported that *Bacillus bulgaricus* were present in small numbers only and that there were at least two other bacteria present. The Council refused recognition to agar-lac because its composition is not correctly declared, because it is exploited in a way to cause laymen to use it to their detriment, because unwarranted therapeutic claims are made for it, because its name does not indicate the most potent constituent, phenolphthalein, and because the use of a ready-made combination of cathartic drugs with lactic acid ferments is unscientific (*Jour. A. M. A.*, Nov. 14, 1914, p. 1777).

Asepticones. Asepticones, sold by the Chinosol Company, are vaginal suppositories stated to contain salicylic acid, boric acid, quinin and chinosol. On the basis of the evidence submitted the Council on Pharmacy and Chemistry voted that asepticones be refused recognition because unwarranted and misleading therapeutic claims are made; because the name does not indicate the potent constituents and because it was considered an unscientific shotgun mixture (*Jour. A. M. A.*, Nov. 14, 1914, p. 1778).

Bacillicide. Bacillicide, sold by the Prophytol Products Company, Richmond, Va., is an unscientific solution of the glycothymolin type. It was refused recognition by the Council on Pharmacy and Chemistry because its composition is secret, because unwarranted and exaggerated claims are made for it and because the use of complex mixtures of uncertain composition is unscientific and contrary to the best interests of the public (*Jour. A. M. A.*, Nov. 14, 1914, p. 1778).

Iron Solution for Intravenous Therapy. This solution, manufactured by Perkins and Ross, Colorado Springs, Colo., contains soluble iron phosphate as its essential constituent and is recommended as a "chalybeate, emmenagogue and tonic." As the intravenous adminstration of a drug like iron, which must be continued for long periods, can not be considered the method of choice, as the composition of the solution is such that changes may occur on standing, etc., which would make the preparation dangerous, and as the method of marketing the solution does not insure its sterility, further increasing the danger of its use, the product was refused recognition by the Council on Pharmacy and Chemistry (*Jour. A. M. A.*, Nov. 14, 1914, p. 1778).

Lysoform. Lysoform and Crude Lysoform, made by the Lysoform Gesellschaft, Berlin, Germany, are solutions of potash-soap stated to contain respectively 6, 7 and 10 per cent. of formaldehyd. These preparations were refused recognition by the Council on Pharmacy and Chemistry because unwarranted claims were made in regard to their efficiency and because their indiscriminate use for the treatment of diseases was recommended (*Jour.* A. M. A., Nov. 21, 1914, p. 1870).

Phecolates, Phecolax, Phecozymes and Phecotones. These are tablets put out by F. Waldo Whitney designed to form part of a system of treatment founded on the theory of autotoxemia. The different mixtures consist in the main of well-known remedies, one of them containing ten constituents. Most extravagant claims are made for these mixtures. The Council on Pharmacy and Chemistry voted to refuse them recognition as unscientific shot-gun mixtures and because the names do not indicate their potent constituents (*Jour. A. M. A.*, Nov. 21, 1914, p. 1870).

Serum Vaccine, Bruschettini. This vaccine, sold by R. G. Berlingieri, New York, has for its aim the destruction of the tubercular cell and the faciliation of its elimination by the natural expulsive processes. The manufacturer not having submitted proof of the value of the preparation, the Council on Pharmacy and Chemistry voted that it be refused recognition. Later, information was received that the preparation was now used only in slight cases (*Jour. A. M. A.*, Nov. 14, 1914, p. 1870).

Sherman's Non-Virulent Tubercle Vaccine. This product of G. H. Sherman, Detroit, was refused recognition by the Council on Pharmacy and Chemistry because the far-reaching claims made for it were not substantiated by suitable evidence (*Jour. A. M. A.*, Nov. 21, 1914, p. 1870).

White Sulphur Salts. This is an effervescing salt put on the market by the White Sulphur Springs, Inc. It was refused recognition by the Council on Pharmacy and Chemistry because it did not represent the water of White Sulphur Springs, W. Va., as claimed (*Jour. A. M. A.*, Nov. 21, 1914, p. 1870).

Ungentum Selenio Vanadic, v. Roemer. This ointment, marketed by Schering and Glatz, New York, is claimed to contain selenium oxycyanid and venadium chlorid. No evidence of the value of the preparation either in carcinoma or in any of the very long list of other diseases in which it is recommended was submitted. The pharmacologic evidence that such a preparation would be of value in such conditions being practically nil, the Council on Pharmacy and Chemistry refused recognition to the product (*Jour. A. M. A.*, Nov. 21, 1914, p. 1870).

Iodia. Iodia (Battle and Company) is claimed to contain potassium iodid in combination with iron phosphate and vegetable "principles." It is extravagantly recommended for use in many and varied conditions. It is asserted to be "almost a specific" in eczema and rheumatism and "a highly efficient form of iodin." The A. M. A. Chemical Laboratory having shown that untrue statements in regard to the composition and preparation are being made, the Council on Pharmacy and Chemistry refused recognition to Iodia on this account: Because unwarranted therapeutic claims were made and because the use of this complex mixture is unscientific and a detriment to the profession and the public (*Jour. A. M. A.*, Nov. 21, 1914, p. 1871).

Narcophin. Narcophin consists of morphin meconate and narcotin meconate in molecular proportions. It is claimed to be a scientific substitute for opium and to have advantages over morphin. The Council on Pharmacy and Chemistry was unable to accept the therapeutic claims made for it (*Jour. A. M. A.*, Nov. 21, 1914, p. 1872).

Cysto-Sedative. Cysto-sedative (Strong, Cobb and Co., Cleveland, Ohio) is said to contain thuja occidentalis, pichi, saw palmetto berries, triticum repens and hyoscyamous. Cysto-sedative was refused recognition by the Council on Pharmacy and Chemistry because unwarranted and preposterous claims were made in regard to its preparation and because unwarranted therapeutic claims were made for this unscientific mixture (*Jour. A. M. A.*, Dec. 12, 1914, p. 2149).

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The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

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ON A BUSINESS BASIS.

The Medical Society of the State of Pennsylvania is a chartered organization and it is imperative that its business be conducted in a way that will satisfy the courts. To administer the business connected with the Medical Benevolence Fund and the Medical Defense Fund, and to safeguard in various ways the rights of nearly seven thousand members, is no small undertaking and it must be done on a strictly business basis. There are sticklers for individual rights within the society and enemies of ethical medicine outside the society that make it necessary that everything done by the society or its officers be done in a way that will keep the society out of court wherever it is possible, and enable it to come out on top in case it is forced into litigation. For these reasons the House of Delegates and the Trustees have made certain definite rules for the management of the society and the conduct of the members. One of these rules is that the *per capita* assessment of each member must be paid annually on or before March 28 in order to continue his membership in the society. All memberships terminate automatically on January first, but all who were members on December 31 are carried as members up to March 28, at which time they are automatically stricken from the roster as from the first of January. One whose *per capita* assessment has not been received by the state secretary on March 28 forfeits his membership in the state society and all rights and privileges for membership even though he has paid his annual dues to his county society. The secretary of the county society in collecting dues acts as the agent of the member and of the county society; the state society is not responsible for any neglect on the part of the local secretary to forward the *per capita* assessment. It is up to the members, therefore, to see that their dues are paid to the county secretary and by him forwarded to the state secretary.

As the JOURNAL goes to press the *per capita* assessment has been received from about three thousand members. Tioga County Society with thirty-six members forwarded its last assessment on Jaunary 26, and Sullivan County Society with ten members sent its last assessment on February 5. Several societies have paid for all but one or two of their members. Doubtless several hundred members have paid their annual dues where there has not yet been time for it to be forwarded and received by the state secretary.

All officers and members of county societies should make special efforts to have each member pay his dues promptly. If your name is not printed in the annual list of officers and members of county societies it will be your own fault; if you do not receive the JOURNAL for April you may remember that your dues have not been paid; if the American Medical Association notifies you that you are dropped from its fellowship it will do you no good to get angry; if you are so unfortunate as to be sued for alleged malpractice and the state society refuses to look after your defense because you are no longer a member it will do you no good to say, "I had no idea of this! I never was sued before!" If you have not already done so pay your dues and pay them now. Your local secretary does not enjoy dunning you any more than you delight in dunning a patient. It is up to you as an individual member to see that your membership is protected and then the officers of the state society will ever be watchful to protect your interests. S.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA AND ITS MEMBERS.

No body of physicians is efficient and powerful, which has not a society, one of whose functions is to hold scientific meetings. At these meetings the knowledge which has been gained by the members is given to the organization for the common good. The telling of such does the teller good, and the hearer gains more by hearing the author than by reading his written word. The larger society has the advantage over the smaller in that it contains more investigators and observers and in these particulars covers more widely the field of medicine. This society contains many leaders in medicine. No state society is more favored in this particular. Their statements are authoritative and the last word at the time. The annual meeting of this society should always be considered first by the members, when a medium of communication with the profession is desired. The last two sessions have shown that the meetings of this society are more largely attended than many sections of the American Medical Association. These audiences have grown because the hearers have been rewarded by live and earnest presentations of the problems of daily medical life. The speakers at these meetings feel assured of intelligent, critical and responsive audiences, who will discuss the papers in a helpful way. The publication of the papers in the Journal gives the speaker directly an audience of seven thousand of his near-by neighbors and many times this number in distant places because of the abstracts and quotations of his paper which are made.

This society then should be for its members more and more the medium for the publication of the discoveries and advances in medicine which they have made and of the critical analyses of the new work of others which they have done. J.

THE PHILADELPHIA SESSION.

The Committee on Scientific Work held a meeting in Philadelphia, February 4, all members being present, to make arrangements for the next session. To better accommodate the professors in the medical colleges it was decided to ask the House of Delegates to change the time of the opening of the session from the fourth to the third Tuesday of September.

Five volunteer papers will be accepted for the General Meetings and seven each for the Section on Medicine, the Section on Surgery and the Section on Eye, Ear, Nose and Throat Diseases. The title and a brief outline of all proffered papers should be submitted to the chairman of the committee or to the appropriate section officer, not later than May 1, for the consideration and approval of the committee at its second meeting when completing the final program. The names and addresses of these committeemen will be found on advertising page IV. of this issue. An author wishing stereopticon or projectoscope for the illustration of his paper must ask for the same when submitting title and outline.

After a careful consideration of the subject it was decided to continue for another year the plan inaugurated last year of doing without stenographers, the vote by which this action was taken being decisive though not unanimous. The author of each paper will be expected to submit a copy of his paper to the person designated on the program to open the discussion so that the latter can write out his discussion before coming to the meeting.

It is already evident that the session in Philadelphia next September will outclass any former gathering of the society, and each member, general practicer or specialist, college professor or country member, will both see and hear something that will be of value to him. S.

THE HARRISON LAW AS APPLIED TO PHYSICIANS.

After three years' discussion, the Harrison Bill has become a law, being signed December 17, 1914, and becoming effective March 1, 1915. Its object is to limit the sale of habit-forming drugs to legitimate purposes by requiring a record of all transactions in such drugs. Any physician who dispenses or prescribes any drug preparations containing opium or coca leaves or any of their derivatives is required to register with the collector of internal revenue of his district and to pay an annual registration fee of one dollar. This is prorated for the period from March 1, 1915, to July 1, 1915, at thirty-four cents. Physicians dispensing their own drugs must use the blank prescribed by the commissioner of internal revenue in ordering their supplies, and must keep a record of all habit-forming drugs dispensed to patients. Physicians prescribing drugs must sign their full name and give their registration number with the name and address of the patient on each prescription. All persons having such drugs in their possession March 1, 1915, must make an inventory of such drugs showing exactly the amount on hand at that time. This inventory, which must be verified by affidavit, is kept by the individual and is not filed with the commissioner. One important point of controversy between the physician and the druggist is settled by the ruling of the commissioner of internal revenue. Only the original of prescriptions containing these drugs can be filled. The refilling of prescriptions is forbidden. Patients desiring an additional supply of such drugs must procure an original prescription from the physician. The law also requires a general registration of all physicians, dentists, druggists and veterinary surgeons, and only such persons will be allowed to dispense or prescribe these drugs.

This law is a legislative experiment. It will cause physicians some inconvenience but it will afford a means of tracing distribution of habit-forming drugs. Unfortunately in the past some registered physicians have been caught in the dragnets of officials hunting out those selling dope to the weak-minded and criminals. If we as physicians try to help in the proper enforcement of this much-needed law it is probable that amendments to the law, giving the conscientious physician more liberty and less inconvenience, may be secured, though it must be admitted that the law and the regulations for its enforcement, so far as yet published, are not intended to interfere with the proper practice of medicine. Physicians should at once take two precautions: They should make immediate application to the deputy commissioner of internal revenue of their district for registration, and they should make an inventory of all drugs and drug preparations in their possession containing opium or cocain, so that when the law goes into operation, March 1, each physician may have written evidence of the amount of these drugs in his possession at that time. A list of deputy commissioners for Pennsylvania with addresses will be found on the advertising pages in the last form of this issue. Physicians not already registered should at once send thirty-four cents for registration fee and ask for a copy of regulations for the enforcement of the Harrison Law. It will be well also to inclose a dollar for order blanks to be used in ordering from dealers any drug or drugs containing opium or coca leaves or their derivatives. S.

"WITH SABER AND SCALPEL."

We have before spoken of the great privilege it is for the medical profession to be able to read and have on their shelves a book written by one of their own number which is not on distinctly medical subjects. We are very glad, therefore, to welcome the autobiography published under this title by Dr. John A. Wyeth of New York. This book can take a worthy place beside "The Corner of Harley Street" and the nonprofessional writings of Weir Mitchell, Sir Frederick Treeves and a few others.

Dr. Wyeth is now one of our soldiers though in '61 his rifle was pointed mostly toward the state represented by this JOURNAL. We are, however, as proud of him as a soldier as we have been of him later as a surgeon, as is proved by the fact that he has deservedly received practically all the honors within the gift of the medical profession of this country.

Dr. Wyeth's book first deals with southern life before the war and many interesting descriptions and anecdotes make the chapters on *ante bellum* some of the most delightful we have read. The stories of Dr. Wyeth's career in the Confederate Army form an unusually interesting personal narrative of a soldier. The latter part of the book deals with Dr. Wyeth's surgical career, his contributions to science, and, his crowning achievement, the establishment of the New York Polyclinic. The principal events of Dr. Wyeth's career are, of course, familiar to every physician but there are many interesting details and many anecdotes and incidents of medical life in New York which will make this book especially interesting to all our readers. While the medical profession has bestowed what honor it could upon

Dr. Wyeth it is still much in his debt and he makes this debt all the greater by giving us this most interesting volume. J. M. W.

MUSIC AND HEALTH.

The power of music to influence the health of the listener has been recognized from early times and it became historic in the attempts of David to drive out Saul's distemper.

We believe no one has been bold enough to ascribe any direct influence of tonal vibration upon the material of the body, but through the medium of the nervous system marvellous changes, physical and chemical, come to pass, and the effects of the art, which above all others plays upon the emotions, must certainly be more than trifling. Even the "unmusical," those who are not especially susceptible to sweet sounds, are affected, and affected differently, by a jig or a funeral march.

Attempts have been made to classify musical compositions as to their effects, and mental disturbances have been treated privately with varying success. Some hospitals for the insane make much use of music as a general means of influencing their patients and always with favorable results for the time being, at least.

A National Society of Musical Therapeutics was founded last year and the names of a number of physicians appear on the list of members. A magazine for the purpose of helping along this movement to utilize music as a means to health has been started, and it seems as if the subject would be looked into deeply and the place of music as a therapeutic agency placed in its proper pigeon hole, for reference in the suitable case.

No matter to what extent music may restore a person to the normal, there can be no question but that it may help other influences to incline the person from the normal. There are very many compositions, notably among those by Chopin, which are the outcome of more or less melancholy moods, and, while beautiful enough and harmless to the healthy, when made a steady diet and source of self-consolation by those suffering from depression from mental or bodily causes, their effect is undoubtedly pernicious, just as a too exclusive diet of olives or meringues will likewise depress the general bodily condition and mental atmosphere of the person so indulging his sickly appetite. The physician, knowing this tendency to make too much of music inclined to the morbid, can do much to rescue his patient and restore him to health by the suggestion or command that he or she abandon his or her present emotional exercise and adopt something equally beautiful but more robust.

One wonders, in this connection, what is the general influence of the present ragtime craze upon the mental and physical condition of its hearers. Being in no wise serious but, on the contrary, happy-go-lucky in mechanism and performance, it certainly can not depress the vitality and is far better in this respect than the popular melodies of a generation or two since, which were, with few exceptions, tinged with melancholy. The African jingles of the present day create an emotional atmosphere of restlessness and excitement which is typically American, and which is opposed to health only in so far as our national restlessness and lack of poise tends to make us a people whose national disease is nervous exhaustion. J. F. R.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the January Journal was printed:—

Allegheny County: *Transfer*—William Scott to Fayette County Society. *Death*—James A. Duncan (Bellevue Hosp. Med. Coll., New York City, '65) in Pittsburgh, December 29, aged 74. *Removals*—Lucian C. Fausold from Pittsburgh to Mt. Pleasant (Westmoreland Co.); William A. Forster from Pittsburgh to 6th and Maplewood Ave., Ambridge (Beaver Co.); Isaac N. Lear from Pittsburgh to Birdville.

Armstrong County: *New Member*—J. M. E. Brown, Kittanning, R.D. 2 (by transfer from Clarion County Society).

Clarion County: *Transfer*—J. M. E. Brown to Armstrong County Society.

Cumberland County: *Death*—Milton L. Emrick (Jefferson Med. Coll., '96) in Carlisle, recently, aged 43.

Delaware County: *Transfer*—John J. Donahue to Schulykill County Society.

Erie County: *New Members*—Maxwell Lick, James J. Pfadt, Erie; C. O. Peters, Albion.

Fayette County: *New Member*—William Scott, Mt. Braddock (by transfer from Allegheny County.)

Huntingdon County: *New Member*—James R. St. Clair, Alexandria. *Resignation*—Nell W. Bartram.

Jefferson County: *Removal*—J. Clarence Frye from Crenshaw to Wilkinsburg (Allegheny Co.).

Lancaster County: *New Member*—J. D. Helm, New Providence. *Deaths*—Adam M. Kalbach (Long Island Coll. Hosp., Brooklyn, '67) in Lancaster, January 19, from heart disease, aged 69; James B. Lincoln (Jefferson Med. Coll., '83) in Lancaster, January 17, from cerebral hemorrhage, aged 57.

Luzerne County: *Death*—John Adam Person (Jefferson Med. Coll., '88) in Wilkes-Barre, January 19, from diabetes, aged 53.

Lycoming County: *New Members*—Adelbert D. Dye, J. H. Fisher, Williamsport; C. F. Wackenhuth, Picture Rocks.

Montour County: *New Member*—Burgess A. Gibson, Danville.

Northumberland County: *New Member*—Ralph Markle, Shamokin.

Perry County: *Death*—William James Allen (Baltimore Univ., School of Medicine, '86) in Landisburg, January 2, from nephritis, aged 54.

Philadelphia County: *New Members*—Emory G. Alexander, Thomas M. Armstrong, Weston D. Bayley, Edward H. Bedrossian, Ward Brinton, Stillwell C. Burns, Constantino N. Ciavarelli, George H. Clapp, Thomas L. Coley, John D. Curran, Charles Herbert Doe, Henry M. Freas, Wilbur H. Haines, Henry A. Laessel, John Francis Lewis, Henry K. Mohler, Hubley R. Owen, Timothy O'Rourke, J. Parsons Scheaffer, George H. Shuman, Eugene Swayne, S. Wilmer Turnbull, Linton Turner, Philadelphia; Joseph C. Egbert, Wayne (Delaware Co.); Sergeant Price Martin, Rochester, Minn. *Resignations*—Edith Elizabeth Baldwin, William Bunce, William H. H. Githens, John A. Murphy, Robert Watt. *Deaths* J. Henry Boothe (Medico-Chirurgical Coll., Philadelphia, '99) in Philadelphia, recently; George Howard Hungerford (Univ. of Pennsylvania, '09) in Philadelphia, recently, after an operation for intestinal trouble, aged 29; Isaac Leopold (Univ. of Pennsylvania, '86) in Philadelphia, January 18, from heart disease, aged 51; Davis Bruce Richards (Jefferson Med. Coll., '96) in Philadelphia, January 21, from Bright's disease, aged 47. *Removals*—William H. Bennett from Philadelphia to Children's Sea-Shore House, Atlantic City, N. J.; Walter F. Brown from Philadelphia to Walters Park (Berks Co.); Henry I. Dorr from Philadelphia to 158 Summer St., Somerville, Mass.; R. Dale Hopkinson from Philadelphia to 217 Summit Ave., Jenkintown (Montgomery Co.); Joseph V. Klauder from Philadelphia to S. S. St. Paul, American Line, Pier 62, New York City; George L. Weinstein from Philadelphia to Summerfield, Ohio.

Potter County: *New Member*—Albert Colcord, Port Allegany (McKean Co.).

Schuylkill County: *New Members*—John J. Donahue, Frackville (by transfer from Delaware County Society); William F. Doyle, Pottsville; Albanus S. Ryland, Valley View. *Removal*—Raymond A. Dengler from Gilberton to Delano.

Tioga County: *New Members*—John R. Davies, Blossburg; John C. Doane, Mansfield, F. H. Kennedy, Middleburg Center.

Venango County: *New Member* J. D. Blair, Franklin.

Washington County: *Removal*—William M. Bigger from Bentleysville to 123 Gostlin St., Hammond, Ind.

Westmoreland County: *Removal*—Walter E. Brown from United to Montclair, N. J.

Wyoming County: *New Member*—S. J. Gaul, Laceyville. *Resignation*—Walter M. Cress.

Present Membership 6629. S.

PAYMENT OF PER CAPITA ASSESSMENT.

Since last public acknowledgement on pages 307 and 308, January issue, the per capita assessment for the sixteen months, September 1, 1914, to January 1, 1916, has been received from component county societies as follows:—

Jan. 21,	Franklin	6-24	1046-1064	$52.25
	Blair	9-14	1065-1070	16.50
Jan. 22,	Venango	2-11	1071-1080	27.50
	Erie	9-31	1081-1103	63.25
	Lycoming	1-24, 41-47	1104-1134	85.25
Jan. 23,	Sullivan	1-7	1135-1141	19.25
Jan. 25,	Juniata	10	1142	2.75
	Clinton	6-12	1143-1149	19.75
	Potter	15-17	1150-1152	8.75
	Dauphin	50-59	1153-1162	27.50
	Delaware	3-26	1163-1186	66.00
Jan. 26,	Tioga	1-36	1187-1222	99.00
Jan. 27,	Sullivan	8	1223	2.75
	Westmoreland	50-52	1224-1226	8.25
Jan. 28,	Snyder	11	1227	2.75
	Berks	49-55	1228-1234	19.25
	Bucks	42-45	1235-1238	11.00
	Lancaster	35-55	1239-1259	57.75
	Union	1-13	1260-1272	35.75
	Cumberland	20-22	1273-1275	8.25
	Dauphin	60-66	1276-1282	19.25
	Somerset	16-17	1283-1285	8.25
Jan. 30,	Northampton	38-43	1286-1291	16.50
	Adams	3	1292	2.75
	Luzerne	22-36	1293-1307	41.25
Feb. 1,	Sullivan	9	1308	2.75
	McKean	15-16	1309-1310	5.50
	Mercer	26-38	1311-1323	35.75
Feb. 2,	Columbia	14-16	1324-1326	8.25
Feb. 3,	Blair	15-33	1327-1345	52.25
Feb. 4,	Berks	56-57	1346-1347	5.50
	Wyoming	15-17	1348-1350	8.25
	Huntingdon	1, 8, 10, 12, 13, 15, 22, 23	1351-1358	22.00
	Chester	1-21	1359-1379	57.75
	Dauphin	66-74	1380-1387	22.00
	Westmoreland	53-60	1388-1395	32.00
Feb. 5,	Dauphin	75-77	1396-1398	8.25
	Sullivan	10	1399	2.75
	Montgomery	25-42	1400-1417	49.50
Feb. 6,	Columbia	17-20	1418-1421	11.00
	Schuylkill	18-31	1422-1435	38.50
	Cambria	31-50	1436-1455	55.00
	Fayette	52-75	1456-1479	66.00
	York	49-64	1480-1495	44.00
	Armstrong	21, 29-36	1496-1504	24.75
Feb. 8,	Montour	12	1505	2.75
	Snyder	12-13	1506-1507	5.50
	Northampton	44-45	1508-1509	5.50
	Mifflin	21-23	1510-1512	8.25
	Northumberland	35-40	1513-1518	16.50
	Philadelphia	22-731	1519-2228	1952.50
Feb. 9,	Venango	12-17	2229-2234	16.50
	Potter	18	2235	2.25
	Monroe	7-8	2236-2237	5.50

Feb. 10,	Dauphin	78-85	2238-2245	22.00
	Wyoming	18	2246	2.75
	Cumberland	23-24	2247-2248	5.50
Feb. 11,	Erie	33-40	2249-2256	22.00
	Adams	4-9	2257-2262	16.50
Feb. 12,	Chester	22-24	2263-2265	8.75
	Crawford	16-19	2266-2269	11.00
	Berks	41, 58-66	2270-2279	27.50
	Greene	11, 14-16	2280-2283	11.00
Feb. 13,	Jefferson	4, 18-29	2284-2296	35.75
	Potter	19	2297	2.75
Feb. 15,	Erie	41-42	2298-2299	5.50
	Columbia	21-28	2300-2307	22.00
	Luzerne	37-69	2308-2340	88.50
	Bradford	20-24	2341-2345	13.75
	Clearfield	38-40	2346-2348	8.25
	Washington	37-50	2349-2362	37.50
Feb. 15,	Berks	67-69	2363-2365	8.25
	Lycoming	25-38	2366-2379	38.50
	Lehigh	29-46	2380-2397	49.50
	Armstrong	2, 37-41	2398-2403	16.50
	Beaver	18-24	2404-2410	19.25
	Elk	18-20	2411-2413	8.25
	Monroe	9	2414	2.75

C. L. Stevens, Secretary.

STATE NEWS ITEMS.

MARRIED.

Dr. George Stanford Hensyl and **Miss Helen Bacon**, both of Mahanoy City, at Mt. Carmel, January 19.

DIED.

Dr. C. C. Donovan, Jr., (Univ. of Pennsylvania, '13) in Scranton, January 8, aged 24.

Dr. James T. Hard, Albany, N. Y., Med. Coll., '77) in Sunbury, January 12, from erysipelas, aged 65.

Dr. John D. Baker (American Univ. of Pennsylvania, Philadelphia, '80) in Eshcol, January 12, aged 71.

Dr. William F. Cook (Hahnemann Med. Coll., Philadelphia, '99) in Port Allegany, January 3, aged 44.

Dr. George M. Campbell (Jefferson Med. Coll.,) in Philadelphia, February 11, from heart disease, aged 56.

Dr. James Rea Crawford (Univ. of Pennsylvania, '99) in Philadelphia, January 15, from heart disease, aged 41.

Dr. Robert Shoemaker Dana (Jefferson Med. Coll., '73) in Greenwood, February 1, from general debility, aged 82.

Dr. Burt Lynn Wilson (New York University, New York City, '97) in Cambridge Springs, January 6, from heart disease, aged 43.

Dr. Edward F. Ford (Maryland Med. Coll., Baltimore, '01) in Chester, February 5, from the effects of a paralytic stroke, aged 39.

Dr. Silas W. Newman (Physio-Medical Coll. of Med. and Surg., Chicago, '88) in Scottdale, December 28, from carcinoma of the stomach, aged 61.

Dr. Emery G. Jones (Jefferson Med. Coll., '84) was found dead at his home in Wilkinsburg, January 6, from the result of a gunshot wound, believed to have been self-inflicted with suicidal intent, aged 55.

ITEMS.

Dr. John M. Sheedy, Altoona, sustained a comminuted fracture of the left arm by a fall on a slippery pavement, January 5.

Dr. Norman B. Gwyn, Philadelphia, has left for England to join the British Army. Dr. Gwyn is a nephew of Dr. William Osler.

The Aid Association of the Philadelphia County Medical Society on January 18 received $1000 in cash from an unrecognized donor.

Dr. E. K. Tullidge who sailed for Europe December 8, has been made a member of the medical staff of the Red Cross Hospital, Vienna.

The Medical Club of Philadelphia on January 15 elected Dr. McCluney Radcliffe president, and reëlected Dr. William S. Wray, secretary.

Drs. S. D. W. Ludlum and W. B. Cadwallader were, on January 22, elected president and secretary respectively of the Philadelphia Neurological Society.

The Columbia College of Physicians and Surgeons at its annual meeting elected Dr. G. W. Berntheizel president and Dr. C. P. Stahr secretary and treasurer.

Drs. Ernest W. Kelsey and Charles W. Schaubel were, on January 26, elected president and secretary respectively of the Medico-Legal Society of Philadelphia.

Dr. William N. Bradley and Dr. Maurice Ostheimer were, on January 12, elected president and secretary respectively of the Philadelphia Pediatric Society.

The Friends Asylum for the Insane at Frankford, Philadelphia, has had an amendment to its charter, and will henceforth be officially known as "The Friends Hospital."

Drs. M. Howard Fussell and O. H. Perry Pepper were, on January 14, elected president and secretary-treasurer respectively of the Pathological Society of Philadelphia.

Dr. George W. Mellon, Philadelphia, who has had charge of returning to Switzerland the insane and mentally deficient immigrants, will join the American Red Cross in France.

Quarantined for Scarlet Fever. Four buildings of the Home for Feeble-Minded at Polk have been placed under quarantine by the state Department of Health for scarlet fever.

The Schuylkill County Medical Society held its annual meeting on January 12, when the new constitution recommended by the state society was adopted and officers elected for 1915.

Dr. F. P. Hollister, Scranton, was mentioned some months ago as having removed to Philadelphia but he was there only six months while taking postgraduate work and is now back in Scranton.

The Cumberland County Medical Society held its annual meeting and banquet, January 12, at which the twenty physicians present were addressed by Dr. George R. Moffitt, bacteriologist of Harrisburg, and Dr. Theodore Appel of Lancaster.

Contracts Have Recently Been Awarded for the construction of an observation building and a nurses home at the Municipal Hospital for Contagious Diseases, Philadelphia, the former to cost $68,921, and the latter $51,890.

The Tioga County Medical Society, at its annual meeting in Wellsboro, January 22, elected officers for the ensuing year and accepted the new constitution. Cases of sarcoma of the face were reported by Drs. DeWitt, Longwell and Mastin.

Dr. William C. Gorgas, Surgeon-General U. S. Army, addressed the Philadelphia County Medical Society, on January 27, on the sanitary and hygienic question involving the construction of the Panama Canal, after which a reception was given in honor of Dr. Gorgas.

The Nu Sigma Nu Alumni Association of Western Pennsylvania was organized at Pittsburgh, February 6, 1915, with the following officers: Dr. Edward Stieren, president; Dr. Russell H. Boggs, vice president; Dr. J. H. Wagner, secretary; Dr. V. E. Van Kirk, treasurer. The monthly meetings will be scientific and social.

The Perry County Medical Society, at its annual meeting, January 13, adopted the new constitution, approved by the state society, with slight modifications, and the secretary was instructed to have it printed in book form together with the list of presidents and the fee bill reported and adopted at the same meeting.

Time of Philadelphia Session. The House of Delegates by vote taken by mail has changed the time of the Philadelphia Session from the regular fourth Tuesday of September to the third Tuesday. The House of Delegates will hold its first meeting on Monday evening, September 20 and the scientific and social meetings will be on the succeeding three days.

Section on Pediatrics. The Philadelphia County Medical Society, in session January 21, passed the following resolution: *Resolved,* That a section on pediatrics be established in the Medical Society of the State of Pennsylvania, provided there are sufficient members through the state interested in pediatrics to warrant a section devoted to that specialty.

Prof. John J. Abel, of Johns Hopkins University, will deliver the first Mellon Lecture under the auspices of the Society for Biological Research of the University of Pittsburgh in the lecture hall of the Mellon Institute of Industrial Research, Pittsburgh, February 27, at 8 P.M. The subject of the lecture will be "Experimental and Chemical Studies of the Blood and Their Bearing on Medicine."

The Warren County Medical Society held its annual meeting and banquet, January 15, with twenty-six members present. Dr. John Calhoun Russell was toastmaster, and the following responded to toasts: Dr. W. M. Robertson on "Why Some Surgeons Take Life So Easy"; Hon. E. S. Lindsey, "The Doctor on the Witness Stand;" Rev. Walter Beck on "The Doctor as We Know Him." A short business meeting followed the banquet.

Demand New Hospital. At the annual meeting of the Philadelphia County Medical Society, January 20, resolutions were adopted declaring that the present Philadelphia General Hospital is inadequate, and if permitted to continue without alterations will endanger the prestige not only of the state, but the medical profession, and demanding that councils make available $1,000,000 for the reconstruction of the building. A committee, consisting of Drs. William H. Walsh, Charles A. E. Codman, Herman B. Allyn, W. M. Late Coplin, and William L. Rodman presented the resolution to the councils.

Antivivisectionists Busy. Just as this form goes to press there comes to hand a letter said to be generally distributed to Pennsylvania physicians asking several questions regarding "vivisection." The most of these questions are so worded that if they are answered by either "yes" or "no" the answers will be twisted in a way to make it appear that the physician is opposed to all animal experimentation. If a physician is in favor of castration of one repeatedly convicted of rape, and has this condition in mind when answering some of the questions, he will be quoted as favoring vivisection of human beings. Give colored insert in this issue careful consideration.

Was This Your County Society? The retiring president of one of our county societies had this to say in his address: I assure you, gentlemen, that I am loath to say what I know is the truth, and my pessimistic statement would not alter the past, neither do I believe that to call your attention to your own stagnant indifference would have any tendency to awaken you from your lethargy. So with deepest regrets for the past, I say gentlemen sleep on, while I extend my profound sympathy to my successor. Possibly I might get even with him by being absent from the meetings of this society for the coming year. Probably he may realize what it means to preside over nothing, and that power and dominion arise only from activity and number.

Charitable Bequests in Pennsylvania. By the will of the late Elizabeth A. Lippe, Philadelphia, the following hospitals receive $5000 each: Woman's Homeopathic Hospital, Children's Homeopathic Hospital, Philadelphia; St. Joseph's Hospital, Reading; and $300 to St. Vincent's Home and Maternity Hospital, Philadelphia. By the will of the late James F. Hope, Philadelphia, $50,000 is awarded to the Philadelphia Hospital for the Treatment of Contagious Diseases. By the will of the late Mrs. Helen Louise Merrick $10,000 is bequeathed to the new children's ward of the Germantown Dispensary and Hospital and to St. Timothy's Hospital, Roxborough. By the will of the late Mrs. Ellen Matilda White, Norristown, the following Philadelphia institutions receive $1000 each; Home for Incurables, Baptist Home, Baptist Orphanage, Baptist Educational Society, and Pennsylvania State Baptist Missionary Society. A similar amount is given to the Charity Hospital, Norristown.

The Public Charities Association of Pennsylvania is prosecuting a campaign to lift this state from its backward position in caring for the feebleminded and insane. The proposed legislation consists of the amendment of existing laws so as to obtain state care for all the dependent insane. It includes, as a first step, the appointment by the Governor of two boards of managers for two new state hospitals for the insane, one in the southeastern and the other in the southwestern section. Each board is to select two superintendents and purchase a site for each hospital. Other legislation proposed concerns state care of the feeble-minded. It provides for an adequate appropriation for the completion of "The Village for Feeble-minded Women of Child-Bearing Age," at Laurelton, authorized by the Legislature in 1913; and the compulsory commitment, under proper safeguards, of alleged feeble-minded persons for observation and segregation, when proved necessary. Each county society is asked to hold a special meeting, if necessary.

GENERAL NEWS ITEMS.

The American Society of Tropical Medicine will hold its twelfth annual meeting in San Francisco, June 14 to 16.

Dr. Ira S. Wile, New York, secured first position in the competitive examination for the director of public health education.

Popular Lectures. Stanford University is giving a series of popular medical lectures with topics like "The Problem of the Crippled Child." "Feeble-Mindedness, Its Coincidences and Consequences," etc.

Council on Pharmacy and Chemistry. During January the following articles were accepted for inclusion in New and Nonofficial Remedies: Leukocyte extract (Squibb), E. R. Squibb and Sons; glycotauro capsules (half size), Hynson, Westcott and Company; alcresta ipecac tablets, Eli Lilly and Company; cantharidin (Merck), Merck and Company; luetin, H. K. Mulford Company.

Insane and Feeble Minded. The Bureau of the Census has issued a report on the Insane and Feeble-minded in Institutions, based upon a special census taken in 1910. This report contains (1) the detailed statistical tables previously published as Bulletin 119; (2) descriptive and analytical text, including tables of ratios and percentages and a few diagrams: and (3) a summary of the state laws relative to the care of the insane. Copies can be had by addressing Director Harris of the Bureau.

Mortality Statistics for 1913. The annual report on mortality in the United States, relating to the calendar year 1913, issued by Director Harris, of the Bureau of the Census, of the Department of Commerce, shows a death rate of 14.1 per 1000 estimated population in the registration area of the United States. The total number of deaths (exclusive of stillbirths) in the registration area, which now contains about two thirds of the population of the United States, was 890,848. The lowest rate ever shown in the bureau's reports was that for 1912, which was 13.9 per 1000. There has been a marked, though not continuous, decline in the death rate since 1880, when it was 19.8 per 1000, based on the deaths among 17 per cent. of the country's population. There has been an almost continuous increase from year to year since 1900 in the death rates from cancer, organic heart diseases and endocarditis, nephritis, and Bright's disease. The most marked increase for any one of the most important twelve causes of death was that in the rate for cancer, which rose from 63 per 100,000 population in 1900 to 78.9 in 1913, and in only two cases did the rate for any year between 1900 and 1913 show a decrease as compared with the preceding year. The lowest rate shown by any city was that for Seattle, Wash. (8.4), while the highest (20.8) was for Memphis, Tenn.

Aid to Belgian Physicians and Surgeons. The Committee of American Physicians for the Aid of the Belgian Profession is constantly receiving heartrending reports regarding the distress of our Belgian Colleagues and their families. Their plight is indeed a sad one. The urgency of the situation resembles that of a great conflagration. Promptness of action doubles and trebles its value. February will be a hard month in Belgium, with great suffering from severe weather added to their other trials. Our English colleagues are fully awake to the situation. Though their number is small compared to that of America, they have contributed several thousand pounds to this cause. Arrangements have been perfected by which contributions are being promptly converted into supplies with every assurance that they will reach our destitute colleagues.

Report of the treasurer up to and including February 6, 1915. Contributions:—

Union Trust Company, Pittsburgh,	Banking Facilities
Sterrett & Acheson, Attys., Pittsburgh,	Professional Service
Dr. Frank Overton, Patchoque, N. Y.	$25.00
Dr. Franklin H. Martin, Chicago, Ill.,	100.00
Dr. F. F. Simpson, Pittsburgh,	100.00
Dr. S. Peskind, Cleveland, Ohio,	25.00
Dr. and Mrs. George C. Smith, Mansfield, Ohio,	5.00
Dr. Samuel Ayers, Pittsburgh,	20.00
Dr. Edwin Walker, Evansville, Ind.,	25.00
Dr. Boleslaw Lapowski, New York, N. Y.,	10.00
Dr. Thos. E. Satterthwaite, New York, N. Y.,	20.00
Dr. Thomas L. Stedman, New York, N. Y.,	25.00
Dr. Richard E. Eustis, Boston, Mass.,	10.00
Dr. Mark W. Richardson, Boston, Mass.,	10.00
Dr. Wm. Allen Pusey, Chicago, Ill.,	25.00
Dr. M. C. Shelton, Joplin, Mo.,	5.00
Dr. Henry F. Walker, New York, N. Y.,	25.00
Dr. Boyd Cornick, San Angelo, Texas,	2.50
Dr. David W. Cheever, Boston, Mass.,	25.00
Dr. Virgil P. Gibney, New York, N. Y.,	25.00
Dr. John B. Murphy, Chicago, Ill.,	100.00
Esther F. Boland, Boston, Mass.,	5.00
Dr. Chauncey W. Norton, Saranac Lake, N. Y.,	25.00
In Memory of H. H. C., Boston, Mass.,	10.00
Dr. S. J. Meltzer, New York, N. Y.,	15.00
Dr. David Bovaird, New York, N. Y.,	25.00
Evelyn C. Manter, Winthrop, Me.,	10.00
Dr. L. Maude Warren, Baldwinsville, Mass.,	5.00
Dr. Ambrose Tabot, Kansas City, Mo.,	10.00
Dr. J. G. R. Mainwaring, Flint, Mich.,	25.00
Dr. James C. Thompson, Pittsburgh,	25.00
Dr. Lowell C. Frost, Hollywood, Cal.,	10.15
Emma T. Frost,	10.15
Dr. F. W. Stetson, Boston, Mass.,	10.00
Dr. Guy L. Hunner, Baltimore, Md.,	25.00
Dr. George E. Lyon, Moweaqua, Ill.,	5.00
Dr. Edward E. Krumbhaar, Philadelphia,	10.00
Academy of Medicine, Cincinnati, Ohio,	100.00
Dr. David S. Moore, Birmingham, Ala.,	10.00
Dr. C. M. Banks, Springfield, Tenn.,	1.00
Marion Co. Medical Soc., Marion, Ohio,	25.00
Dr. Henry M. Swift, Portland, Me.,	10.00
Dr. E. H. Mackay, Clinton, Mass.,	5.00
Dr. R. O. Raymond, Flagstaff, Ariz.,	10.00
Dr. J. H. Bertrand, DeForest, Wis.,	5.00
Dr. E. S. Reedy, Seattle, Wash.,	5.00
Dr. and Mrs. H. C. Wetherill, Denver, Colo.,	50.00
Dr. Burnley Lankford, Norfolk, Va.,	3.00
Dr. Charles W. Allen, Hoboken	5.00
Dr. Wm. Van V. Hayes, New York, N. Y.,	25.00
Drs. Parker & Parker, Peoria, Ill.,	5.00
Dr. Heman B. Chase, Hyannis, Mass.,	10.00
Dr. John B. Wheeler, Burlington, Vt.,	25.00
Dr. Stuart McGuire, Richmond, Va,,	50.00
Dr. John G. Clark, Philadelphia,	50.00
Dr. F. R. Underwood, Seattle, Wash.,	5.00
Dr. Abraham Jacobi, New York, N. Y.,	100.00
W. A. M., Ossining, N. Y.,	2.00
Dr. Theodore C. Janeway, Baltimore, Md.,	15.00
Dr. Isaac M. Heller, New York, N. Y.,	5.00
Dr. S. H. Miller, Joplin, Mo.,	5.00
Dr. B. F. Saylor, Redding, Cal.,	10.00
Dr. J. Wolf, Pittsburgh,	10.00
Jasper Co. Medical Society, Joplin, Mo.,	10.00
Dr. Sidney A. Chalfant, Pittsburgh,	10.20
Dr. Frederick Abbe, Boston, Mass.,	10.00
Dr. J. Riddle Goffe, New York, N. Y.,	25.00
Dr. Henry F. Graham, Brooklyn, N. Y.,	5.00
Dr. W. A. Coventry, Duluth, Minn.,	10.00
Dr. A. William Reggio, Boston, Mass.,	25.00
Dr. Edward B. Heckel, Pittsburgh,	25.00
Dr. T. R. Williams, Punxsutawney,	10.00
Dr. J. Knox Simpson, Jacksonville, Fla.,	10.00
Sonoma Co. Medical Society, Sebastopol, Cal.,	50.00
Anonymous—E, Pittsburgh	10.00
Dr. A. B. Hirsh, Philadelphia,	5.00
Dr. Henry Eastman, Pittsburgh,	10.00
Dr. H. S. Steensland, Syracuse, N. Y.,	2.00
Washington Co. Medical Soc., Marietta, Ohio,	25.00
Dr. Lewis S. Pilcher, Brooklyn, N. Y.,	25.00
Dr. M. Iverson, Stoughton, Wis.,	5.00
Dr. A. H. Traver, Albany, N. Y.,	5.00
Dr. Carl B. Drake, St Paul, Minn.,	5.00
Dr. Leonard Freeman, Denver, Colo.,	5.00
Dr. Howard C. Taylor, New York, N. Y.,	25.00
Dr. Walter F. Donaldson, Pittsburgh,	5.00

Deer Lodge Co. Med.Soc., Anaconda, Montana,	75.00
Dr. W. S. Zimmerman, Spartansburg, S. C.,	10.00
Dr. H. MacVicker Smith, Pittsburgh,	5.00
Dr. Ethel D. Brown, New York, N. Y.,	5.00
Dr. Brown Pusey, Chicago, Ill.,	25.00
Dr. C. H. and W. J. Mayo, Rochester, Minn.,	100.00
Miss Margaret E. Reed, Chicago, Ill.,	1.00
Dr. E. L. Neff, Pittsburgh,	5.00
Dr. F. P. Sprague, Boston, Mass.,	50.00
Dr. Caspar W. Miller, Wallingford,	50.00
Dr. John T. Bottomley, Boston, Mass.,	25.00
Dr. Henry W. Frauenthal, New York, N. Y.,	25.00
Dr. Edwin Sternberger, New York, N. Y.,	10.00
Capt.W.A.Powell, M.C., U.S.A., Nogales, Ariz.,	5.00
Dr. Frederick Fraley, Philadelphia,	10.00
Dr. George W. Ely, Pittsburgh,	5.00
Dr. Samuel C. Plummer, Chicago, Ill.,	5.00
Dr. R. W. Hodges, Baltic, Mich.,	10.00
Dr. Ellen A. Stone, Providence, R. I.,	10.00
Dr. Charles A. Elsberg, New York, N. Y.,	25.00
Dr. F. M. Hicks, San Antonio, Texas,	10.00
Dr. Marion Marsh, Worcester, Mass.,	2.00
Ohio Valley Acad. of Medicine, Bellevue,	25.00
Dr. M. P. Messinger, Oakfield, N. Y.,	2.00
Dr. Willard Bartlett, St. Louis, Mo.,	10.00
Dr. M. Manges, New York, N. Y.,	15.00
Dr. G. D. Hale, P.A.Surg., U.S.N., San Francisco, Cal.,	10.00
Dr. Alfred Wiener, New York, N. Y.,	10.00
Dr. John Woodman, New York, N. Y.,	5.00
Dr. Robert T. Frank, New York, N. Y.,	10.00
Cash—B, Pittsburgh,	10.00
Dr. R. O. Raymond, Flagstaff, Ariz.,	10.00
Dr. A. Hymanson, New York, N. Y.,	5.00
Dr. Mazyck P. Ravenel, Columbia, Mo.,	15.00
Oklahoma State Med.Assoc., Muskogee, Okla.,	100.00
Dr. H. H. Sherk, Pasadena, Cal.,	25.00
Dr. Charles Lee King, Pasadena, Cal.,	20.00
Dr. James Williamson, Philadelphia,	5.00
Dr. J. S. Kauffman, Blue Island, Ill.,	5.00
Dr. John P. Treanor, Dorchester, Mass.,	10.00
The Clinical Club of Albany, Albany, N. Y.,	25.00
Dr. Thomas J. Watkins, Chicago, Ill.,	50.00
Dr. H. E. Oesterling, Wheeling, W. Va.,	10.00
Dr. Leslie W. Schwab, Chicago, Ill.,	2.00
Dr. A. Howard Smith, Marietta, Ohio,	5.00
Dr. Woodson H. Taulbee, Maysville, Ky.,	5.00
Total,	$2528.00
Disbursements:—	
450 boxes of food purchased from Austin, Nichols and Co., at $2.20 per box,	$990.00
During week ending Jan. 23,	660.00
During week ending Jan. 30,	440.00
During week ending Feb. 6,	440.00
Total disbursements,	$2530.00
Deficit,	$2.00

BULLETIN EXCERPTS.

Medical Reporter, Chester.

The *Reporter* makes the claim, which of course, is subject to challenge, that the Chester County Medical Society is the immediate progenitor of the Medical Society of the State of Pennsylvania, and that the first practical suggestion which resulted in the founding of the state society originated in our County Society.

We present, herewith, the evidence: Under date of December 1, 1847, we find the following minute: "Dr. Worthington offered the following resolutions which were adopted. *Whereas*, No state medical society exists in Pennsylvania, and believing that such an institution would greatly contribute to the advancement of medical knowledge within its bounds. Therefore

"*Resolved*, that it is expedient to hold a convention at such time and place as may be hereafter agreed upon in order to take this subject into consideration and effect such a permanent organization as may be deemed best suited to accomplish the object in view.

"*Resolved*, that Drs.Worthington, Parish, Huddleson, Townsend and Harry be delegated to represent this society in said convention with power to supply vacancies in their body.

"*Resolved*, that the corresponding secretary be directed to forward a copy of the proceedings to the different medical schools and associations in the Commonwealth and solicit their early coöperation."

Under date of April 25, 1848, there is the following minute: "The delegates appointed to the state convention reported that they all attended said convention except Drs. Huddleson and Worthington—the latter being prevented by indisposition deputed Dr. Rivinus who attended in his stead." And on October 31, 1848, the following is recorded: "The following delegates were appointed to the Medical Society of the State of Pennsylvania to meet in Reading on the second Wednesday of April next; *viz.*, Drs. Harry, Walker, Harvey and Worthington." These minutes do not indicate that Dr. Worthington's resolution was in response to any suggestion from an outside source though such may have been the case. It would be interesting to have the minutes of other medical societies in existence at that time searched for similar data or for evidence that a communication from our county society was received by them. Perhaps Dr. Stevens or some one else is familiar with all the facts which led up to the founding of the state society. Until other evidence is presented we will claim to be the parent of the state society and we need not say that we are mighty proud of our child.

(Note: Dr. William B. Atkinson, in his History of the Medical Society of the State of Pennsylvania, page 379, Transactions for 1896, gives this paragraph: "Early in 1848, the Societies of Chester and Lancaster Counties invited all these societies to send delegates to the City of Lancaster for the purpose of organizing a State Medical Society. Unfortunately no record of this invitation has been found, so that the writer is unable to show what the chief ideas of those who issued the invitation were. No doubt they had observed the difficulty experienced in the various societies in the keeping up of the organizations, and hoped by means of a state society to institute a more powerful aid in the formation of medical societies, and the union of these into a harmonious body which would attract all respectable physicians to connect themselves with the local bodies."—Editor.)

Reporter, Lackawanna.

From Secretary's Report. Although in real members we are fifty-five short of the apparent membership one year ago, and in spite of the fact that we began the year, 1914, facing a deficit of nearly $500 in the treasury; we take a keen pleasure in being able to inform you that after the payment of all necessary expense we close the year with a balance, or surplus, of approximately $500.

This has been accomplished by some active work on the part of the secretary-treasurer, and circumstances with which you are already familiar: And although it may be impossible to annually collect the amount of the gross receipts this year we think we safely see sufficient funds ahead to pay the annual expense and again have an equally good surplus.

I would respectfully offer to you Mr. President, and Gentlemen of Society that sufficient be added to this balance to make the sum total $500 and that this amount be placed in a trust fund or savings account at the usual rate of interest paid on such accounts, and that we endeavor annually to add a like amount until such time as the fund may be sufficiently large to be used for the purchase of a building or site for a building, to be used as a permanent home for this society. If future posterity can say Lackawanna County Medical Society began substantially to plan for a permanent home during the year 1914, I will be pleased and repaid for the fact that I have served you in my humble way as secretary.

Bulletin, Montgomery.

"It's Up to You." "All are but parts of one stupendous whole," writes Pope. Therefore, it is up to you to do your part in the scheme of things. When you entered the medical profession you took upon yourself obligations you wot not of. The same when you became a member of the medical society. Do not lie down on the job.

Parasites may be necessary in the ultimate development of the scheme of things, but do not be one from choice. The scheme of which you are a part, and this special organization, the Montgomery County Medical Society, has no use for a parasite. Do not be an anchylostoma duodenale hanging on and receiving sustenance through an annual-five-dollar tentacle, to the advantages of the state society through membership in the county society. In such a position you become a grafter, a consumer upon the treasures laid up by the worker and producer. You have a talent. Take it out of the napkin and come with it to the support of the society.

If you are modest and shy like the violet, do not waste your sweetness on the desert air; come into the sunshine of the open meeting (2:00 P.M. the first and third Wednesday every month. Charity Hospital, Norristown), where you will blossom to advantage.

If you can not talk in public, come listen. You will learn a thing or two and also give stimulation to the speaker by your presence.

If you are appointed to a committee count it a compliment, for you were being sized up as a live one. If you were asked to read or discuss a paper, some one thought you had brains. Show the quality of your grey matter by your acts. Accepting or declining shows extremes of mentality.

It is up to you what value the world places upon your worth.

You find the meetings slow, you learn nothing and those who attend talk like old fogies? . Take a minute's introspection, maybe the trouble lies with you.

If you are a grouch and do not like the way things are done, come to the meetings and

" . . . . conspire
To grasp this sorry Scheme of Things entire,
. . . . shatter it to bits and then
Remould it nearer to the Heart's Desire."

At least it will show you are not a dead one.

It is up to you what you are and what the society is.

Weekly Roster, Philadelphia.

President Montgomery to County Society Members. The Philadelphia County Medical Society has made unexampled progress during the past year, a progress to be expected from the indefatigable energy displayed by the president but to a much greater degree due to his wise and judicious policy in distributing the work and responsibility among the members through the appointment of committees. It is the desire of the incoming president that this work shall be extended rather than curtailed, and his selection for membership in committees will be for the purpose of giving as far as possible new men an opportunity to display their talents. He urgently bespeaks the sympathy and coöperation of the men who have served so efficiently in the past, for the society in reaching out for new workers can not afford to lose the support of the old workers.

The present condition of the city affords a splendid opportunity for the exercise of the functions of an efficiently working body of medical men. Medical men, more than any other portion of the community, are interested in the problems of clean, well-paved streets, plenty of pure water, good housing, proper drainage, rapid transit, and ample hospital accommodations for the care of the sick and indigent. Our principal program for the year should be a more extended and efficient organization of the profession, an organization which shall contain within its ranks every legal practitioner who is doing honest work.

For the purpose of interesting a larger number of men in the advantages to be gained by this larger organization, the president desires to visit each branch and have an invitation extended to the members interested in the branch as well as to the men in the vicinity who are not as yet identified with the county medical society. He will gladly arrange to address the assembly on the advantages of organization and what may be accomplished thereby.

The further interest of the work can be promoted by having the central body arrange to hold one meeting during the year with each one of the branches where a hall sufficiently large to accommodate the occasion can be secured and, as the majority of the branches meet in library buildings, there should be no difficulty about an adequate auditorium. This plan would give the members of the central body an opportunity to get better acquainted with the men in the outlying districts, and to appreciate better the difficulties which they have to overcome. The sacrifice of a little time and effort on the part of these men will be a great encouragement to the profession in general.

REVIEW.

THE CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume III., Number VI. Octavo of 190 pages, 61 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Published bimonthly. Price per year, paper, $8.00; cloth, $12.00.

The present number of Murphy's Clinics is made unusually interesting by an elaborate description, with numerous photographs, of Dr. Murphy's new office building. This building is certainly a thing of beauty and can well serve as a model of its kind. The clinical subjects treated in Dr. Murphy's usual interesting and instructive way are: Clinical talks on surgical and general diagnosis; autosensitized autogenous vaccines; impacted fracture of external tuberosity of tibia; sarcoma of the right tibia; exostosis of interarticular surface of upper end of left tibia; multiple metastatic arthritides; cartilaginous exostosis of left humerus; bilateral tuberculosis epididymitis; gummatous tumor of the testicle; perforating duodenal ulcer; retroperitoneal sarcoma.

J. M. W.

COMMUNICATION.

ANATOMICAL LAW OF PENNSYLVANIA.

To the Editor: The Anatomical Board of the State of Pennsylvania, of which Dr. A. Hewson, 2120 Spruce Street, Philadelphia, is the secretary, has prepared an act amending the Anatomical Law of Pennsylvania, which will be introduced during the present session of the Legislature; and they ask the support of all the practitioners of medicine of all schools, in securing the passage of this measure. Members of our state society are earnestly urged to visit or write to their representatives and secure their influence in this matter.

The following synopsis embodies the principal points covered by the proposed act:

1. The first amendment provides that the board of distribution shall be known as the Anatomical Board of the State of Pennsylvania. While the board has in fact been known by this name, it has not been so designated by Act of Assembly.

2. The second amendment extends the provisions of the present act to all persons having charge of the unclaimed bodies of indigents.

3. It requires immediate notice of death of indigents required to be buried at the public expense. This requirement is contained in another act, April 20, 1911, but it is desired to incorporate it into the original act.

4. It provides that relatives claiming bodies of indigents for burial must claim the body within twenty-four hours. It is already provided by another act (Act, April 20, 1911) that relatives may claim bodies for burial at their expense. The twenty-four-hour provision is new, and is designed to prevent coroners and others from keeping bodies until they become unfit for anatomical purposes, on the plea that relatives may claim them. In fact, relatives can usually obtain bodies from this board at any time within thirty days after death.

5. It incorporates into this act, provisions of existing acts regarding soldiers, sailors and marines, etc., so as to make this act complete in itself, covering the whole subject as far as possible.

6. It provides for burial, at the expense of the counties, of bodies unfit for anatomical purposes, upon certificate from the agent of this board, at an expense not to exceed $20. The present Burial Acts (April 20, 1911, and May 23, 1913) do not require the certificate and allow $35. Twenty dollars will amply cover the expense; the reduction in the allowance, together with the requirement of the certificate of unfitness for anatomical purposes, will prevent the burial of bodies, as frequently happens, that ought to be delivered to this board.

7. It provides for the burial of bodies rendered unfit for anatomical purposes, at the expense of the person failing to comply with the provisions of the act. Otherwise, the body might be detained till unfit, then buried at the public expense, with the only penalty the criminal penalty, which this board is exceedingly loath to invoke.

8. The acts of April 20 and May 23, 1913, repealed, are practically incorporated into this act by the foregoing provisions except that the amount allowed for burial, fixed at $35 by the act of 1913, is put back to $20 as fixed by the act of 1911.

WILMER KRUSEN, Chairman,
Committee on Public Policy and Legislation.

BUREAU OF MEDICAL EDUCATION AND LICENSURE.

BUREAU OF MEDICAL EDUCATION AND LICENSURE.
MEMBERS BY APPOINTMENT.
JOHN M. BALDY, Pres., 2219 DeLancey St., Philadelphia.
DANIEL P. MADDUX, Chester.
WILLIAM A. STEWART, Pittsburgh.
CALVIN R. JOHNSTONBAUGH, Bethlehem.
ADOLPH KOENIG, Pittsburgh.
MEMBERS EX-OFFICIO.
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SAMUEL G. DIXON, Harrisburg.

BUREAU ON MEDICAL EDUCATION AND LICENSURE.

Harrisburg, Penna.

To the Editor: In accordance with the Act of Assembly of 1913, you will find enclosed a tentative list of the hospitals of the State of Pennsylvania, approved by this Bureau for internship. You will also find enclosed a blank form which it will be necessary to have filled out and presented at the time of application by every applicant applying to enter the Pennsylvania State Medical Examinations.

On the part of the intern, it is contemplated that this year of internship be a continuous one in one institution and unless the applicant can show good reasons for leaving the institution in which he began his internship his application is apt to be rejected.

On the part of the hospital, it is contemplated that this internship be a real fifth year of education for the intern, that the men on the staff of the various hospitals be of such caliber as to be capable of teaching, that they practically resolve themselves into postgraduate teachers and that the hospitals themselves furnish a sufficiency of equipment in order that their staff doctors may make this a real educational year.

The Bureau has used its discretion largely in the line of leniency in establishing this first tentative list, in order to give all institutions every reasonable chance and time in which to comply with the requirements of the Act of Assembly. In doing this they have accepted from the institutions arrangements and plans which the Bureau looks upon as simply temporary and a start in the right direction; it will look for the complete fulfillment of the letter of the law to the future. Whether or not the name of any given institution be retained on this list of approved hospitals will depend largely on how earnestly and rapidly the hospitals arrange to perfect their various departments in order to bring them up to the highest efficiency.

For instance in the anesthetic department; the Bureau looks upon the arrangement by which a member of the staff is the official anesthetizer, as merely temporary. It is eventually desirable that the official anesthetizer live in the institution or at least if he live outside of the hospital that he give his full time to the service. It is perfectly evident that no one engaged in the active practice of medicine can competently fulfill the intent of the law in this department.

As to obstetrics, the Bureau looks upon any arrangements by which the intern receives his experience through a dispensary service as a temporary arrangement accepted by the Bureau as a means of aiding the institution to at least fulfill the spirit of the law.

As to the clinical and pathological laboratories, a member of the staff in active practice may be acceptable provided he has a proper amount of special education in laboratory work and provided he gives a sufficient amount of time daily to the work in the laboratory. But taken as a rule such a plan may not work out as efficient and if found in any case not to be efficient will not be acceptable.

During the course of the coming year an inspector will call and inspect each institution and the efficiency of its arrangements. At the end of the year the service rendered the intern will be available information for the Bureau.

In the future the judgment of the Bureau as to the availability of hospitals for the approved list will be based upon these points and upon any other information obtainable by them.

J. M. Baldy, President,
Bureau of Medical Education and Licensure.

TENTATIVE LIST OF HOSPITALS OF PENNSYLVANIA APPROVED BY THE PENNSYLVANIA BUREAU OF MEDICAL EDUCATION AND LICENSURE FOR INTERNSHIP.

Adrian, Punxsutawney.
Allegheny General, Allegheny.
Allentown, Allentown.
Altoona, Altoona.
Braddock Gen., Braddock.
Charity, Norristown.
Chester County, West Chester.
Chester, Chester.
Children's Homeo., Phila.
Columbia, Wilkinsburg.
Conemaugh Valley Memorial, Johnstown.
Crozer, J. Lewis, Chester.
Douglas, Frederick, Memorial, Philadelphia.
Dubois, Dubois.
Easton, Easton.
Episcopal, Philadelphia.
Frankford, Philadelphia.
Garretson, Philadelphia.
German, Philadelphia.
Germantown, Germantown.
Hahnemann, Phila.
Hahnemann, Scranton.
Hamot, Erie.
Harrisburg, Harrisburg.
Homeo. Med. and Surg. Hosp. and Dispensary, Pittsburgh.
Homeo. Med. and Surg., Reading.
Howard, Philadelphia.
Indiana, Indiana.
Jefferson, Philadelphia.
Jewish, Philadelphia.
Lancaster Gen., Lancaster.
Lebanon Sani., Lebanon.
McKeesport, McKeesport.
Medico-Chirurgical, Phila.
Mercy, Johnstown.
Mercy, Pittsburgh.
Mercy, Wilkes-Barre.
Methodist Episcopal, Philadelphia.
Mid-Valley, Blakely Boro, Olyphant.
Montefiore, Pittsburgh.
Moses Taylor, Scranton.
Mt. Sinai, Philadelphia.
Nesbitt West Side, Dorranceton.
Northwestern General, Philadelphia.
Packer, Robert, Sayre.
Passavant, Pittsburgh.
Pennsylvania, Phila.
Philadelphia Gen., Phila.
West Phila. Gen. Homeo., Philadelphia.
West Phila. Hosp. for Women, Philadelphia.
Phoenixville, Phoenixville.
Pittsburgh, Pittsburgh.
Pittston, Pittston.
Polyclinic, Philadelphia.
Pottstown, Pottstown.
Pottsville, Pottsville.
Presbyterian, Pittsburgh.
Presbyterian, Phila.
Providence, Beaver Falls.
Reading, Reading.
Roosevelt, Philadelphia.
St. Agnes, Philadelphia.
St. Francis, Pittsburgh.
St. John's Gen., Pittsburgh.
St. Joseph's, Lancaster.
St. Joseph's, Phila.
St. Joseph's, Pittsburgh.
St. Luke's Homeo., Phila.
St. Luke's, S. Bethlehem.
St. Mary's, Philadelphia.
St. Timothy's, Phila.
St. Vincent's, Erie.
Samaritan, Philadelphia.
Shenango Valley, New Castle.
South Side, Pittsburgh.
State, Fountain Springs.
State, Hazleton.
State, Scranton.
State, Shamokin.
Stetson, Philadelphia.
Suburban Gen., Bellevue.
Tuberculosis League, Pittsburgh.
Uniontown, Uniontown.
U. S. Marine, Pittsburgh.
University, Philadelphia.
Westmoreland, Greensburg.
West Penn, Pittsburgh.
Wilkes-Barre City, Wilkes-Barre.
Williamsport, Williamsport.
Woman's Homeo. Assoc. of Penna., Phila.
Woman's Hosp., Phila.
Woman's Medical College, Philadelphia.
Woman's Southern Homeopathic, Phila.
Wyoming Valley Homeo., Wilkes-Barre.
York, York.

This certifies that Dr. .... has rendered satisfactory service as an intern in the .... Hospital at .... for a period of .... months from .... and that the requirements of the Pennsylvania Statute governing the post graduate year of hospital internship have been complied with on the part of the hospital.

..............................M. D.
President of Staff.

....
Superintendent of Hospital.

SOCIETIES.

THE PITTSBURGH OPHTHALMOLOGICAL SOCIETY.

Meeting of January 4, 1915.

Cataract from Excessive Heat. Dr. Wible presented the case, a man of thirty-four; in April, 1913, his left eye was struck and a cataract developed in a few days. Free needling in June did not produce any absorption of the lens but a second needling in July was followed by a gradual absorption with a final visual result of 20/10 with a + 13.00 D. The right was normal and the media perfectly clear until in December when deposits began to appear on the posterior capsule; these slowly increased until at the present time an irregular mass covers the posterior pole of the lens and produces marked impairment of vision. The patient had been employed as chainmaker, working over hot iron eight hours a day for many years. There being no other cause present to account for his condition, which in appearance was typical of glassblowers' cataract, Dr. Wible was of the opinion that the prolonged exposure to great heat was the etiological factor.

Unusual Foreign Body in the Orbit. Dr. Heckel reported a case of a child two years old, that had received an injury to the right eye by falling upon the point of a paring knife. The blade had entered just below the supraorbital ridge, one end of the wound at the inner canthus and extending outward for three quarters of an inch. The child when first seen was suffering from shock but not from hemorrhage. The tension of the eyeball was normal and it showed no evidence of injury. No foreign body was seen but on probing the gaping linear wound, a metallic body was felt; the object was grasped with forceps and to his great surprise, part of the paring blade, two and a half inches long and five eighths of an inch wide at the base where it was broken off, was slowly withdrawn. The blade when removed was bright and clean: it must have passed through the ethmoid cells but there was no bleeding from the nose. The baby has now recovered, the fundus is normal and there is no impairment of any of the ocular movements. In view of the large size of the foreign body the fact that greater injury did not result is truly remarkable.

Anomalous Vitreous Vessel. Dr. Krebs presented a boy of sixteen in whose left eye there was a twisted vascular loop that arose from near the center of the optic disc and extended forward into the vitreous about three millimeters; it was of the color of the veins of the fundus and did not pulsate. The eye was otherwise normal.

Chronic Iridocyclitis. Dr. Weisser reported a case of old chronic iridocyclitis in a patient with syphilis and tuberculosis. A Wassermann test was positive and there was a clear history of syphilis. There being no contraindication, salvarsan was given intravenously and three days later a severe acute iritis set in which gradually disappeared after one month's treatment with mercury.

Staphyloma of Cornea. Dr. Markel reported the results of operation for a staphyloma of the cornea in a girl of fourteen. In June she had a severe mucopurulent conjunctivitis with pneumococci as the exciting organisms, followed by rapidly spreading ulcers of the cornea. The ulcer ended in penetration of the cornea with prolapse of the iris. Healing was then prompt but a staphyloma appeared which, however, flattened out after the use of a compression bandage. In November, the staphyloma recurred and became quite large, being about 7 mm. in diameter. Compression bandage and even sclerocorneal trephining failed to reduce the bulging; so in December, the staphyloma was excised, an elliptical section of the cornea and the adherent atrophic iris being removed. The wound edges were united by three sutures, the conjunctiva dissected up from the entire limbus and drawn over the cornea by a purse string suture. The sutures were removed ten days later. The final result is good, the cornea being flat and the eye quiet.

Exophoria of Doubtful Origin. Dr. Weisser reported a case of muscle disturbance that was of interest from the standpoint of its supposed etiology. A woman of forty, who recently began to have changes in her menstrual periods, thought to be due to beginning menopause, developed a divergent strabismus which varied greatly in degree and was accompanied by all sorts of annoying symptoms, such as diplopia, spasm of accommodation, photophobia, etc. The muscle actions were good in all directions and the divergence could be overcome with effort. Under cover, there was a divergence of 18°. Treatment consisting of complete rest, occasional use of cold cloths to the eyes and increasing doses of nux vomica is causing marked improvement.

Chemical Burn of Eyes from Indelible Pencil. Dr. Stieren reported the case of a male of twenty-five who, while writing with an indelible pencil, had a piece break off and enter the left eye. A physician removed the piece of crayon at once and cleansed the eye; the conjunctiva had been stained blue. The eye became very painful that night and there was profuse lacrymation. When seen by Dr. Stieren the next morning, there was a denuded area on the cornea extending from the lower border of the pupil downward to about 1 mm. beyond the limbus into the conjunctiva; the epithelium and the superficial corneal stroma were involved. There was no longer any staining of the cornea or conjunctiva but the eye was acutely sensitive, with a strongly contracted pupil and marked photophobia. Dr. George S. Crampton reported a series of these cases before the section on ophthalmology of the College of Physicians of Philadelphia in February, 1913, and reviewed the work done experimentally with anilins upon the tissue of the eye and reached the conclusion that only basic anilin colors are injurious. Crystal violet, Victoria blue and malachite green produced panophthalmitis when dusted into the conjunctival sac of rabbits. The pencil used by Dr. Stieren's patient is known as violet copying, made by E. Faber and no doubt contained crystal violet. In treating eye injuries from anilin pencils, efforts should be made to remove the particles as soon and as thoroughly as possible, even though they be deeply imbedded in the ocular or orbital tissues, as the vitality of the corneal epithelium is quickly diminished by the outflow of dye. Complete exfoliation of the epithelium results, if the amount of anilin color be excessive or its presence long continued, and corneal opacities with serious loss of vision may result. The disfigurement from the staining of the tissues is unimportant as it disappears rapidly. Vogt recommends prompt irrigation with a five per cent. solution of tannin instead of the usual collyria. He states that the use of sodium chlorid, boric acid or sodium bicarbonate, the very solutions most likely to be at hand, only intensifies the caustic action of the dye and that they do more harm than if nothing at all is used. Adolph Krebs, Secretary.

PHILADELPHIA POLYCLINIC OPHTHALMIC SOCIETY.

At the meeting of December 10, a symposium on Diseases of the Pituitary Body was presented.

The Ocular Symptoms. Dr. William Campbell Posey said that owing to the intimate anatomical relationship which exists between the pituitary body and the optic and motor nerves of the eye, the ocular symptoms are the most frequent and important of the neighboring symptoms of diseases of that body. Exophthalmos, though infrequent, sometimes occurs, and may be attributed perhaps to a lymphatic stasis in the tissues of the orbit. If there be complete bitemporal hemianopsia, the Wernicke pupillary inaction sign may be demonstrated. The ophthalmoscopic signs are pallor of the optic nerves, with diminution of the blood currents, followed by pronounced simple atrophy. Choked disc occurs in the later stages in a few cases where intracranial tension is much increased. The most instructive changes are in the visual fields. While it was formerly thought that bitemporal hemianopsia was diagnostic, it is now held that scotoma, homonymous hemianopsias and even slight cutting in the temporal fields are of no less significance. Great stress was laid upon the importance of recognizing cutting in the color sense in the upper, outer field of vision. Scotomas, paracentral in type, symmetrical in the two eyes or not, are of great significance. The field in one eye is usually much more compromised than in the other. Great variations occur in the field from day to day, according to the changing degree of pressure exerted upon the optic nerves within the brain.

Dr. Posey dwelt upon a diminution of the light sense due to involvement of the axial fibers of the optic nerve, as a symptom of great importance. Homonymous hemianopsia is explained by an extension of the diseased process backwards and the involvement of the tract. Binasal hemianopsia sometimes occurs, but in rare instances, and illustrates how varied the pressure may be upon the chiasm and optic nerves. Involvement of the motor nerves of the eye occurs, but is infrequent.

The Nervous Symptoms. Dr. John H. W. Rhein: The symptoms of diseases of the pituitary body are interesting to the neurologist chiefly because this organ is connected with the brain and produces symptoms referable to the nervous system by reason of pressure upon the neighboring parts rather than for nervous symptoms which disorders of the gland itself may cause. Dr. Rhein divided the symptoms into three groups, namely, hyperpituitarism, hypopituitarism and dyspituitarism. Typical examples of hyperpituitarism or hypopituitarism are rare, one condition overlaping the other giving rise to a syndrome which is best described as dyspituitarism. Cushing classifies the states of dyspituitarism into five groups: namely, "Group 1, cases of dyspituitarism in which not only the signs indicating distortion of neighboring structures but also the symptoms betraying the effects of altered glandular activity are outspoken; Group 2, cases in which the neighborhood manifestations are pronounced but the glandular symptoms are absent or inconspicuous; Group 3, cases in which neighborhood manifestations are absent or inconspicuous, though glandular symptoms are pronounced and unmistakable; Group 4, cases in which obvious distant cerebral lesions are accompanied by symptomatic indications of secondary pituitary involvement; Group 5, cases with a polyglandular syndrome in which the functional disturbances on the part of the hypophysis are merely one and not a predominant feature of a general involvement of the ductless glands."

In a study of 169 cases vertigo was mentioned in ten per cent. of them. Roth, however, in a statistical study found vertigo present in about thirty per cent. of the cases. Vomiting is a comparatively frequent symptom and occurs in twenty to forty per cent. of the reported cases.

The symptoms referable to the visual apparatus briefly consist of disturbances of the field of vision, occasional oculomotor involvement, nystagmus, exophthalmos, ptosis and photophobia. Other cranial nerve involvement is rare. There are however, a few cases on record in which the facial nerve is paralyzed in some instances. It may be said further that the increase in the fat deposit is due to deficient posterior lobe secretion. Wakefulness, excitability and irritability point to hyperpituitarism, drowsiness and convulsions, to hypopituitarism. Hyperpituitarism produces gigantism and acromegaly. Hypopituitarism produces adiposity, failure of development and sexual infantilism in childhood, and in adults sexual infantilism of the reversive type.

The Medical Treatment. Dr. Wendell Reber: Two years ago (in Scranton) I spoke of a case of pituitary disease that had increased to the point of hemianopsia in which the patient declined operation. The patient was then put upon thyroid extract and pituitary substance and regained full visual fields. I called attention to the fact at that time that inasmuch as there were certain cases which spontaneously ruptured it is quite possible that there were other cases. In view of these facts it seemed to me wise to exhaust medical measures before resorting to surgical measures. Hirsh reports three deaths in nine patients operated on. Naldeck reported a case last year treated by organotherapy in which full fields had been gained and full visual functions. So that it seems to me it is well worth our while to consider the possibilities of organotherapy.

In the early part of this year I saw a patient who at first presented the clinical features of noninflammatory glaucoma. I studied this case very carefully and for a long while. The fields are extremely interesting in that they offer the binasal rather than the bitemporal phase, which would favor the diagnosis of glaucoma. There was a small island in the center of the field of the right eye, in the left eye there was a little central field and then an island. Corrected vision equalled 5/5. There was a saucering of the nerve with a slight undermining of the edge of the disc. I finally advised against operation and put him on miotic treatment and elimination. The case was later studied exhaustively by Dr. Weeks of New York and we both came to the same conclusion, that it was probably a case of mixed picture or disease of the pituitary body.

I feel that we are not simply justified but absolutely called upon, where the symptoms are not too urgent, first to exhaust medication including every possible form of organotherapy before counseling resort to surgery.

Dr. William Zentmayer, in discussing, said that he should like to emphasize the point brought out by Cushing that homonymous hemianopsia occurs with greater frequency in these cases than is generally supposed. The explanation given by Cushing of the apparent preponderance of bitemporal hemianopsia being that this defect is the one for which cases are referred to those particularly interested in conditions about the hypophysis. Another important point in connection with field defects is that the cases which ultimately become bitemporal hemianopsic often early show symmetrical contraction of the upper outer boundary. Dr. Zentmayer referred to a case in which the deep-seated nasal pain was the cause of the case being mistaken for one of intranasal disease. A feature of importance in hypophyseal disease is the fluctuation which occurs in the symptoms. A symptom that he had not here touched upon was the early cessation of menstruation. Referring to the rarity of muscular palsies, Dr. Zentmayer stated that in one case he had seen there was a unilateral paresis of accommodation.

Dr. T. B. Holloway stated that as to the prevalence of exophthalmos in association with pituitary lesions, he had seen one case and in this the exophthalmos was but slight. Uhthoff in his statistics credits exophthalmos with being present in eight per cent. of the cases. Lafon has suggested a symptom that has not been mentioned, that is, a recurring congestion of the bulbar conjunctiva, which he is inclined to attribute to associated thyroid trouble, and believes that the congestion is dependent upon vasomotor disturbance. What Dr. Reber has suggested as a possibility, had actually occurred in a case that had recently come under his observation. A previous diagnosis of chronic glaucoma had been made, but a study of the case at the time it came under Dr. Holloway's observation, showed field changes characteristic of pituitary body disease, and the *x*-ray findings, sugar tolerance, and other phenomena all pointed unquestionably to the existence of a pituitary lesion. From the appearance of the discs alone, the diagnosis of chronic glaucoma was not unjustifiable. He thought it possible that the symptoms of sinus disease might be superimposed upon the other symptoms, owing to the breaking through of a tumor and the encroachment made upon the adjacent cells. In reference to the field phenomena, this would depend upon the portion of the tract compressed. Dr. Holloway then referred to the relation of the circle of Willis to the visual tract and referred to the possibility of vascular constriction in tumor of the base and frontal lobes. In several cases he had observed, after operation by Dr. Frazier through the fronto-orbital region, an impairment in upward rotation on the operative side but this promptly subsided and in no instance had he seen it persist as an enduring symptom.

WALTER W. WATSON, Secretary.

Have you paid your county society dues for 1915?

See page 386.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA; SECTION ON GENERAL MEDICINE.

Meeting of December 14, 1914, at 8:15 P.M., Dr. James E. Talley in the chair.

Recent Changes in Our Concept of the Action of Digitalis. Dr. H. C. Wood, Jr., said that many of the older theories concerning the effects of digitalis are drawn from experiments in which toxic doses were employed. When given in physiological dose digitalis does not increase the blood pressure in either man or the lower animal. It is probable, however, that there is some constriction ot the blood vessels as is shown by the fact that when the slowing of the pulse is prevented the pressure is increased, and it is probable also that the diuretic effect is due to changes in the caliber of the vessels. The slowing of the pulse, the most constant effect of digitalis, is, in healthy individuals, purely inhibitory. Stimulation of the vagus may produce heart block and other irregularities of rhythm. The slowing of the pulse is completely abolished by large doses of atropin. The muscular tone is not demonstrably affected after small doses, although it is possible that the largest therapeutic doses may increase it. The cardiac contractions are, however, enlarged. The effects in disease are often very different from those in health. In fever the vagus appears to be less than normally irritable, and digitalis does not slow the pulse. In chronic endocarditis the effects are different according to whether the rhythm is normal or there is auricular fibrillation. In the latter condition it will generally produce very great slowing of the pulse. It is impossible from the present data to draw positive conclusions as to the mechanisms of its action in this condition, but it is probably partly due to stimulation of inhibition and partly to diminished ventricular irritability, the result of better nutrition. In cases of endocarditis with normal rhythm its effects are often much less marked. It is a mistake to give digitalis in all cases up until the manifestation of toxic effect. Some conditions require larger doses to have any action, while others may be injured by full doses but benefited by small ones.

Clinical and Electrocardiographic Studies of the Action of Digitalis. Alfred E. Cohn, M.D., of the Hospital of the Rockefeller Institute for Medical Research: The investigations reported were made in patients having an early rather than an advanced stage of heart disease. The mechanism of their hearts was normal; they had no edema, and their blood pressure was within normal limits. The most important alteration we have been taught to look for is in the heart rate. The reduction in the rate of the heart is an effect of digitalis upon which we rely, but one which we have not found constant in the type of cases we are considering. We have been led to conclude from our observations that digitalis slows the sinus rhythm only in the group of hypodynamic hearts, and, that to produce slowing is not a function of digitalis in therapeutic doses. An effect on conduction may be set down as a usual effect of giving the drug, apart from specific preëxisting injury. We have noticed delayed conduction within forty-eight hours after the administration of the drug had been started. In many instances the auriculoventricular interval gradually lengthened during the succeeding three to five days until partial heart block occurred. In some cases, however, block occurs with extreme abruptness. One arhythmia, practically unknown, the result of giving digitalis, is one in which none of the auricular beats are blocked. The auricles and ventricles continue to beat almost at the same time, but there is incomplete coördination between them.

Another new sign in the electrocardiogram is an alteration in the size, shape and direction in the T-wave. The first change noted after the administration of digitalis is usually a diminution of the height of this wave, usually in the third lead first and later in the second. The change may be noticed as early as twenty-four hours, and at the end of forty-eight hours the wave may have become iso-electric, or it may become diphasic. In some electrocardiograms the T-wave for pathological reasons is pointed downward. If digitalis is given, the direction of the T-wave during the action of the drug is pointed upward. While the causative factors in the change of the T-wave can not be precisely explained, the inference is that there is an alteration in the contractile substance of the heart muscle. Two criteria appear then in electrocardiograms to indicate surely the fact that digitalis is acting on the heart; the first in the slight but definite lengthening in conduction; the second, the very curious alteration in the T-wave. Electrocardiographic evidence can be supplied to show that digitalis has an action during fever of a nature precisely similar to that already described in nonfebrile patients. Possibly as an aid to contraction much can be gained from the use of digitalis, but the expectation of obtaining an action on heart rate must be abandoned. There is, however, a group of febrile cases in which digitalis acts efficiently on rate. These in our experience have been patients showing auricular fibrillation or auricular flutter. Another topic, long a subject of conflict, is the relation of digitalis action to blood pressure. In the cases we have studied no alteration in pressure was found. Vascular effects, however, aside from changes in pressure may be produced and the untoward or beneficial nature of these require consideration. In the group of patients under consideration no increase in diuresis takes place. In patients having edema, other factors are involved. That a specific effect on urinary output does not occur as result of giving digitalis in the cases under discussion has an important bearing on the drug's action in edema. In connection with the mechanism of the action of digitalis two possibilities have been much discussed, an action on the inhibitory mechanism and one on the heart muscle itself. Our studies lead us to believe that both views are partially right. In so far as atropin may be taken to be a drug acting especially on the ends of the vagi, a release of the heart from a phase of digitalis action by its use indicates a nerve action of digitalis. In so far as digitalis has other effects which atropin does not release its effect on the T-wave, it may be inferred that it has an action directed more especially to muscle. Both effects can be observed at the same time.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of October 5, 1914, Dr. S. Lewis Ziegler in the Chair.

Gonorrheal Opthalmia. Dr. S. D. Risley exhibited a patient convalescing from a violent attack of gonorrheal ophthalmia, which he said was only case occurring in his services for many years. Patient had first applied with a catarrhal conjunctivitis, which simulated, because of the retrotarsal swelling and viscid discharge, the early, acute stage of trachoma; but laboratory study showed only streptococci and a few pneumococci. A thorough application of silver nitrate at the clinic and an alkaline wash and zinc sulphate at home led to a speedy recovery.

A few days later, patient returned with swollen lids, a profuse purulent discharge and an edematous collar embedding the entire limbus of the cornea. He had severe pain. Laboratory study revealed an abundance of gonococci. He was admitted to the isolation ward, and placed on continuous iced compresses, frequent thorough cleansing and strong solutions of silver nitrate to everted lids and retrotarsal folds. The pain continued. In forty-eight hours, cornea was infiltrated, and anterior chamber apparently filled with pus. The ball was hard, swollen and extremely tender to palpation. Cornea ruptured, and a hopeless prognosis was given.

The conjunctival sac was then filled with a ten per cent. ointment of cassaripe, *i. e.*, the expressed juice of the black cassava, the base of the West Indian pepper-pot used by the natives to preserve meat. The pain and suppuration subsided with great rapidity, the swelling of the lids disappeared, and convalescence was rapid. The site of the corneal rupture, to the nasal side of the pole, became closed, showing a contracting scar and adherent iris when the patient was exhibited by Dr. Risley. Elsewhere, the anterior chamber was reformed. The ball was nearly free from injection, but discolored from the conjunctival infiltration. The man could count fingers readily. Such a recovery from what had appeared at one stage to be a hopeless condition was, in Dr. Risley's experience with gonorrheal ophthalmia, remarkable. For a study of the cassaripe ointment, he referred to his paper presented to the American Ophthalmological Society in July, 1898.

Dr. John Turner asked Dr. Risley how long the ointment would keep.

Dr. Risley replied that if Dr. Turner would open the box, he would find the salve in good condition.

Dr. William Zentmayer spoke of the uncertainty of laboratory diagnosis of gonococcal conjunctivitis, and said that the most competent bacteriologists acknowledge that they are not always able to make such a diagnosis. He then cited a case in a child on whom he had operated. Two days later, there was a discharge from the conjunctival sac, and a collection of necrotic material about the field of operation, with some swelling of the lids. The discharge was grayish. It was not profuse, but free. From a smear of this discharge, a laboratory diagnosis of gonococcal conjunctivitis was made. The next day, the condition was worse, but not clinically characteristic. The case was sent to the Philadelphia General Hospital, where several examinations were made; yet the gonococcus was not discovered. This should not be considered an adverse criticism upon the laboratory in which the first examination was made; because Dr. Zentmayer knew of three instances in which such a diagnosis had been made, in none of which did the case prove to be gonococcal. These three examinations were made in three different laboratories. One of these patients had become perfectly well within forty-eight hours. Dr. Zentmayer said that he would defy anyone to distinguish the gonococcus from the staphylococcus morphologically, as pictured in Axenfeld's textbook. One, however, is Gram negative; and the other, Gram positive.

Dr. William C. Posey asked Dr. Zentmayer whether he had considered the possibility of any of these cases having been metastatic, and said that one could find the gonococcus in smears from the eyes in such cases, even though they might run a moderate course.

Dr. Zentmayer replied that metastatic cases are usually bilateral, while infective cases are unilateral.

Dr. Risley stated that in his case, it was improbable that the condition was metastatic; because it was confined to one eye. The patient had never had gonorrhea himself; but he ascribed the infection to the use of a contaminated towel.

Pulsating Exopthalmos. Dr. William Campbell Posey exhibited a case of pulsating exophthalmos involving both eyes, in a man sixty-six years of age. This condition had arisen after a fall upon the head, and was supposed to be associated with a fracture of the base of the skull; although an *x*-ray plate, taken two years after the injury, was negative. Vision began to fail shortly after the accident, and gradually decreased until that of left eye was finally equal only to counting fingers at twelve inches, that of right eye being 1/60. The ophthalmoscope revealed the visual diminution to be dependent upon a low-grade atrophy of both optic nerves. The retinal veins were still much distended and tortuous; but no signs of present or past neuritis could be seen when case was exhibited. There were no hemorrhages. Both eyes were moderately proptosed, apparently in consequence of a distention of the orbital veins; for a mass of these vessels was easily palpable immediately under orbital rim. This mass of vessels pulsated, and conveyed a thrill to the examining finger. Both eyes were practically immobile. The right superior oblique, the right internal rectus, and possibly the inferior oblique and the left superior oblique, alone functionated. Dr. Posey said that the case had been referred to the Howard Hospital for neurological and surgical study, and that it was the intention of Dr. Edward Martin, surgeon of that institution, to ligate the carotid.

Examination of the nervous system by Dr. John H. W. Rhein resulted as follows: There was no facial paralysis observable. Tongue was pushed slightly to right. Finger to nose test showed marked hypermetry and dysmetry on both sides. Adiadokokinesis was present in the left arm and both legs. With his feet together, there was a tendency to sway and stagger backwards. Walking showed a side-stepping to left. Knee-jerks were increased on both sides, and were equal. Ankle clonus and Babinski phenomena were both absent. There was no paralysis of the arms or legs. There was a marked irregular tremor of both hands. Symptoms were considered to indicate an involvement of the cerebellum, probably in the nature of a destructive lesion occasioned at time of fracture of the skull, two years previous.

Brain Tumor with Choked Disc. Dr. Posey then showed a case of brain tumor with choked disc. This condition had arisen in a nonsyphilitic man, thirty-one years of age, a pattern maker by trade, three years previously, without apparent cause. Vision had begun to fail in the left eye four months previously; and in the right, two months later. Total blindness had ensued in both eyes several weeks before the patient came for examination.

Externally there was nothing unusual, except widely dilated pupils, ocular movements being good, and there being no proptosis. Ophthalmoscopic examination revealed a high degree (5 to 6 D.) of papillitis in each eye, with dilatation of the blood-vessels, hemorrhages and extravasations. This case, too, had been referred to the Howard Hospital; and Dr. Posey said that it was Dr. Martin's intention to perform an immediate decompression operation.

Dr. J. H. W. Rhein, neurologist at the Howard Hospital, reported the family history in this case negative, except that patient's mother had had several still born children and miscarriages. His previous history was also unimportant, aside from the fact that since his eleventh year he had had attacks that, from the description, appeared to have been petit mal. For the last six weeks, he had had occipital headaches, associated with pain in frontal and vertical region, vomiting in the morning and vertigo, objective and subjective.

Upon examination, the following condition was found: Neck was stiff, offering some resistance to rotary movements; right side of mouth drooped when he made an effort to show his teeth, and tongue was slightly pushed to the right. Slight hypalgesia was present on right side of face. There was no weakness of arms or legs, no tremor and no adiadokokinesis. The right knee-jerk was slight, and the left absent; but both were reinforcible. There was no clonus nor Babinski sign. Dr. Rhein thought that the symptoms pointed to a diagnosis of cerebellopontile angle tumor, showing involvement of fifth, seventh and twelfth cranial nerves.

Extensive Injury to Both Eyes from a Dynamite Explosion. Dr. Posey exhibited a patient in whom the left eye had been torn away entirely, and the right so badly lacerated that vision was reduced to light-perception. When first seen, some weeks after the accident, the conjunctiva had covered lower half of the cornea and was adherent to a dense scar, which extended across the cornea. The lens was cataractous. The eyeball was entirely exposed by a complete entropion of the lower lid, the lid being folded back and held in its ectasic position by a broad fold of cicatricial tissue. Four operations were necessary: First, the lid was restored to its normal position by cutting away the adhesions and transplanting a broad pedicled flap from the forehead, to fill in the gap left between lid and brow. A month later, the cataract was needled, and the lens afterward removed by the curet. A second needling obtained a clear pupil. Vision being still low, on account of the corneal scar blocking the greater part of the pupil, an iridectomy was made, the sphincter of the iris being incised in such a way that upper margin of the pupil was brought to within a few millimeters of the corneal margin. Corrected vision, at time of exhibition of the patient before the society, was equal to 5/15; and the patient could read newspaper type without difficulty.

Dr. P. N. K. Schwenk spoke of a patient whom he had examined and found with an entirely normal fundus and a vision of 6/5 in each eye with a plus 1½ D. glass. A month later, she complained of pain in the left eye, with which she could not see well. She was then found to require a 3 D. glass in left eye, in order to give 6/5 vision; and the same glass was also needed for the right eye, giving same amount of vision. There was begining swelling of the left disc, 2½ D. Dr. Schwenk notified the family physician of the patient's condition, and they conducted further examinations together. Urine was negative. Two weeks before the meeting, there was also beginning swelling of the left disc, of about 2 D. This had increased to 6; and the right eye had 5 D. of swelling. Patient still retained 6/5 vision, but required a slightly stronger glass in each eye. The fields had just been taken, and showed a limitation for white. The red and blue fields were interlacing. Patient did not have any localized symptoms, other than what could be seen in the fundus. Dr. Schwenk thought that there was probably a new growth affecting the greater part of the left optic nerve and the anterior parts of the fibers of the right.

Dr. John B. Turner asked whether an *x*-ray had been taken of the case, stating that Dr. Schwenk had shown a case in which a brain tumor had been diagnosed from the *x*-ray. A decompression operation was done in this case, and the tumor was not found; but there was every symptom of brain tumor.

Dr. Rhein replied that an x-ray had been taken, but that it showed practically nothing. There was no filling of the sinuses whatever.

Dr. Zentmayer asked whether Dr. Rhein meant the sphenoid sinus, and Dr. Rhein replied that he had referred to the cerebral sinuses.

The Result of an Advancement of the External Rectus, After the Method of O'Connor. Dr. William Zentmayer said that before he described the operation, he would like Dr. Schwenk to show the result. Dr. Schwenk exhibited the patient, and stated that he had had a divergence of fifty to sixty degrees. Dr. O'Connor had come to the hospital personally and performed the operation, with the result that the patient had nearly parallel fixation. The internal rectus was advanced, without cutting the external rectus muscle. It was thought, at the time, that the operation would probably have to be done on each eye; but the result was so good that it was decided to let the case alone until it was seen what the final result would be.

Dr. Zentmayer said that the eye operated on by Dr. O'Connor for him at the same time that Dr. Schwenk 's case was done was one with convergent squint of twenty degrees. The immediate results showed only ten degrees of correction; but later, the amount of squint was lowered, and the result was very good, better than any Dr. Zentmayer had seen obtained from a single advancement without tenotomy. While a good muscle-attachment could be secured by the worth method, the speaker considered the rest of that procedure as faulty as any of the other modifications of the advancement operation, the weak point in this operation being the scleral attachment of the advanced muscle. For this reason, Dr. O'Connor had been anxious to discover some method of shortening the muscle without having the inserted sutures under any strain whatever. He was led to devise this method by having seen the cowboys on the prairie shorten their surcingles by drawing them up between two loops of another strap. He shortened the muscle in the same way.

The first step in the operation was to lay bare the tendon of the muscle, dissecting it clearly and sharply. It was then loosened with a strabismus hook passed under it. With a hook, a narrow band of the tendinous fibers was separated from the upper margin, about 1½ to 2 mm. The same was done below. Dr. O'Connor then made an incision, turning back a central flap of the muscle out of the way, and leaving nothing but the two narrow bands of the tendon lying on the sclera. He next took a piece of Lukens' No. 4, twenty-day catgut, and made a loop beneath one tendinous strip. The next step was to pass the two ends of the suture over the muscle, and then through the loop. He then drew upon these two ends, to bring the loop into position. The strain from the loop of catgut was transferred to the tendinous strips, when the catgut was pulled upon, shortening them very considerably. He also did the same thing below. In order to avoid the hump that would be formed by tying this catgut again, he took a piece of fine 00 catgut, and tied it around the base. He then did the same thing below. When he laid the tongue of muscle down in position again, the considerable amount of shortening obtained could be distinctly seen. This tongue was then advanced by using a single suture. The next step of the operation was to cover the muscle with a fold of conjunctiva and put in a stitch. He did not tenotomize the opposing muscle, because, as he had performed the operation only a few times, he wanted to give it a severe test. The sutures not being under any strain, the patient was allowed to go with only one eye bandaged. Dr. Zentmayer stated that Dr. O'Connor uses for this operation No. 2, No. 3 or No. 4 gut. With the latter, he expects to get twenty degrees of shortening.

Dr. Posey asked how much muscle was cut off.

Dr. Zentmayer replied that none was cut off. He then stated that he had just received a letter from Dr. O'Connor, in which he had tried to explain why the immediate result had been so slight in the operation that he had performed at the Wills Hospital. He thought that he might have paralyzed the muscle fibers at the time of the operation by using a clamp on them; and that these muscle fibers had gradually recovered their tone, when released from the clamp. He said that in future, he would put a suture in, instead of using the clamp.

Dr. Zentmayer added that the catgut must be moistened, but must not be too moist; because this would cause it to swell and make it difficult to tie.

A Case of Lupus of the Eyelid Treated with a Thiersch Graft. Dr. McCluney Radcliffe presented this case because he considered it one of unusual interest. The patient had been referred to the hospital by Dr. F. J. Walter and Dr. C. C. Bahannon, of Daytona Beach, Florida. Several years ago, he had been treated for a small growth on the right cheek, which was apparently cured by means of a plaster. In August, 1913, he noticed an ulcer at the inner canthus of left eye, which was treated by cauterization and *x*-ray for six months, but without improvement. Dr. Bahannon had had a microscopical examination made of the discharge, by the State Board of Health of Florida, and tubercle bacilli were found in it.

At the time of admission to the hospital, there was a large ulcer, of a dirty grayish color, at inner canthus of left eye. It was so painful that cocain had to be applied every few hours, in order to give relief, which, even then, was not complete. The ulcer was curetted, and the site covered with a very thin Thiersch graft, which united promptly. The patient had absolutely no pain after operation. An ulcerative condition existed also on right side of the nose, near the tip. This had been curetted a week prior to the meeting, leaving a raw surface as large as a thumb-nail and quite deep, over which an exceedingly thin Thiersch graft was placed. The appearance of the graft gave every indication of a perfect result.

Dr. Radcliffe also showed a case of ectropion cured by Thiersch grafts, after failure by other operations.

Dr. Risley congratulated Dr. Radcliffe on his results in these Thiersch grafts, and said that he was particularly delighted with this method, by which it was possible to get *in situ* a sufficiently thin Thiersch graft over the denuded surface. This contracted less than anything else that he knew of, and the ultimate results from its use were better than those of any procedure that he had ever tried. He stated that when these grafts do not include the true dermis, they do not shrink afterwards. He had often insisted upon the technic of the operation, stating that one should avoid killing the cells by rough treatment. The grafts should not be removed from the surface of the razor until time to place them on the surface of the wound.

Dr. F. J. Walter of Daytona, Florida, had been impressed with the healing which had taken place. There had been quite a little suppuration, and he had feared that Dr. Radcliffe would not be able to obtain so profitable a result as he had succeeded in getting. Dr. Walter thought that this success had been due to the use of a very thin graft, which had been placed in good apposition with the parts of the cavity at time of operation. The beautiful result that followed had been rather a surprise to him, particularly as the ulcer had been so painful.

Dr. Henry L. Picard asked whether Dr. Radcliffe had taken into consideration the idea that the condition might be an epithelioma in these cases.

Dr. Radcliffe replied in the negative, and stated that he had, at first, taken it to be lupus.

Dr. Picard said that he had seen cases of lupus in adolescents; but that the ulcerations on the face of a man of the age of the patient, usually appearing on a line from the angle of the mouth to the ear, he had always been led to believe to be cancerous or rodent ulcers.

J. Milton Griscom, Secretary.

THE PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting of January 5, 1915, at 9 P.M., College of Physicians, Dr. George M. Coates presiding.

Complications Present in Tonsils and Adenoid Work. Dr. H. M. Becker, Sunbury, said that lymphadenitis of globe and orbit is not rare; we may have rhinitis, pharyngitis, laryngitis, accessory sinus disease, bronchitis, swollen and suppurating glands in neck, obstruction to breathing, short lip, lack of development of superior maxillary, high palatine arch, deviated septum, irregular spacing and malposition of teeth, defective speech, tuberculosis, nephritis, endo- and pericarditis, septic arthritis, metastatic abscesses, otitis, mastoiditis, perisinusitis, sinus thrombosis, brain abscess; some of the conditions frequently present as complicating factors in tonsil and adenoid work. Otitis media as a complication is produced by several modes, mechanical, including obstruction, inflammatory and bacterial. A diseased tonsil is capable of causing otitic suppuration, incurable so long as offending tonsil is permitted to remain. Begin treatment of the otitis by thoroughly cleansing tonsillar fossa and epipharynx; use capsular operation for children, intracapsular for adults. A tonsil operation should never be done during an attack of acute otitis.

In a series of twenty-two patients, in nine of whom both ears were discharging, treatment was given at time of tonsil and adenoid operation. Chronic cases in which discharge had existed from two months to two years, showing various germ infections, principally staphylococcic and streptococcic, several mixed infections, one colon bacillus and two postscarlatinal infections. To present time this treatment has been tried only in chronic cases with perforation.

Immediately after tonsil operation, ear is wiped free of all discharge and condition of tympanum and middle-ear cavity carefully determined; if only a small perforation is present, a long posterior incision is made with an attempt to include the perforation in the incision: After gentle aspiration, canal is again dried, a five per cent. alcoholic solution of iodin freely placed in canal, permitting it to flow through perforation into middle ear; it is surprising with what ease it finds its way down the eustachian tube by favorable position of head; it may be necessary to use otoscope, alternately making pressure and suction. Dry gauze is now placed in contact with drum, not too tightly. In forty-eight hours pack is removed.

Of thirty-one ears thus operated on only four have not ceased to discharge at time pack is removed. One ceased after six days. The remaining three were the one with colon bacillus infection and the two with scarlatinal infection. The ear with colon bacillus infection ceased discharging after four weeks; one scarlatinal after two months; other has not ceased after one and one half years; here greater part of tympanum is lost, and there is necrosis of ossicles. Some radical procedure is necessary. Great majority showed improved hearing, in no ear was there less hearing after operation than before.

Inspiratory Collapse of the Alae Nasi; Etiology and Treatment. Dr. Warren C. Batroff, Philadelphia, described the causes of collapse as due to vacuum formation in the vestibule during inspiration coupled with the effect of the atmospheric pressure on the outside. Opposing this is, first, the normal resiliency of the wings of the nose; second, the elasticity and shape of the alar cartilage; and, third, the tonus of the dilator naris group of muscles. Alar collapse is frequently a secondary affection in individuals who have suffered from nasal obstruction for years, the open mouth with its resultant drag upon sides of nose coupled with atrophy of levator alæ group of muscles being the cause. All parts forming the anterior aspect of the nasal passages, as the cartilaginous septum, the septum membranaceum, the floor of the nose and the anterior inferior nasal spine, as well as the alæ, are instrumental in the production of the affection. The forms of palliative treatment with splints or dilators was discussed, that of Schmidhuisen being the only type worthy of consideration in the opinion of the author as the alæ are unable to vibrate normally and regulate the intake of air in consequence of being held in rigid position. The operations devised by Walsham and by Lack were considered, and their difficulties and results commented on. It was emphasized that before attempting any operation it is necessary to exercise the greatest care in the inspection of the nasal orifice in order to determine which particular part is responsible for the collapse. By means of crayon sketches of the various deformities of the alæ and the septum membranaceum, the operations upon the alar cartilage originated by Eckstein, Halle and Jacques Joseph were fully described with such modifications as have been found at times to be necessary.

Report of Case of Papilloma of Uvula. (History taken Nov. 21, 1912, tumor removed at the same time) was presented by Dr. P. Samuel Stout, Philadelphia. Miss B. S., aged fourteen, (colored) came to Philadelphia from Virginia two years ago. Always well except four years ago had diphtheria. Mother and father healthy, no history of tumors. With the exception of the mass she complains of in her throat, she appears to be a perfectly healthy girl. About four or five months ago, she noticed something go down her throat when she swallowed and come up again when she would hawk, cough or gag. This did not seem to interfere much with talking, eating, etc., but lately when she would cough, up it would come and strike her front teeth, and at times even come out between her teeth. For this annoyance she consulted a physician.

Examination: A mass was found hanging to the end of a very long uvula, which mass moved from its position on the tongue down into the esophagus and would fly up again on coughing and strike the front teeth and then lay on the tongue. The mass was as large as an almond, and created considerable wonder why it did not give more symptoms of discomfort. The mass was immediately removed under local anesthesia, and about half of the uvula was taken with it. Microscopic examination showed it to be a papilloma. Patient was seen one year later without any recurrence.

The Relation of Diseases of the Nose and Throat to the General Practice of Medicine. Dr. Henry Parrish said that the importance and value of a thorough acquaintance with the principles and practice of general medicine to the specialist in any department of medical science can not be overestimated. Numerous diseases affect different parts of the complex physical organism which produce reflex effects and prominent symptoms in the nose and throat. All the organs of the body are united to each other by means of the blood vessels, the lymphatics and general nervous system. Infectious material is conveyed through blood and lymph channels from one organ to another; sensations of pain are transmitted from one part to another. Pulsating uvula may point to disease of the heart. Clinical evidence points strongly to the fact that diseases of the lungs and heart occur in connection with affections of the upper respiratory tract as complications and also sequels of such affections. Septic endocarditis may follow tonsillitis. Asthma is often associated with nasal deformities or disease. Crusta and pus swallowed are the cause of indigestion. Anemia is frequently due to improper oxygenation from faulty respiratory tract, such as adenoid growths in postnasal chamber. Cough and headaches are frequently due to sinus disease or pressure of hypertrophied turbinates on the septum.

Robert F. Ridpath, Reporter.

COUNTY SOCIETY REPORTS.

ARMSTRONG—January.

The Armstrong County Society met, January 5, in the Alexander Hotel, Kittanning, with thirty members present. Officers for the ensuing year were elected. At 2 p.m. the waiting members were in fine condition to do ample justice to the excellent banquet prepared by Mr. Scuyler, the bear-shooting proprietor of the Alexander. Retiring President Stockdale delivered an address above the ordinary, equal to if not superior to the addresses of some of the presidents "higher up." Impromptu speeches followed and it was pleasing to note that every member present responded that all would do better to make 1915 furnish important events to add to the already good history of the society. When the Armstrong County Society was organized in 1863, Dr. Robert G. Ralston of Cowansville was one of its active and enthusiastic members; again when it was reorganized in 1876 he was one of its active members. Dr. Ralston with Dr. Thomas M. Allison and Dr. C. J. Jessop of Kittanning, the only three members of 1876 now living, were present at this annual banquet and some of their reminiscences were interesting. The indications are that the interest will continue and the Armstrong County Society be a benefit to the community and an honor to the state society of which it is a part.

J. B. F. Wyant, Reporter.

CHESTER—January.

The Chester County Society held its annual meeting in the Chester County Hospital, West Chester, January 19. Officers for 1915 were elected and the new constitution and by-laws adopted. The members then took up the discussion of interesting cases occurring in their practice.

Dr. H. A. Rothrock reported a case of general glandular swelling, malaise and high temperature, which very much resembled Hodgkin's disease; there was also a swelling of the eyelids, that is the tarsal cartilage, which is called tarsitis, the origin of which is syphilitic. Upon closer examination a chancre was found upon the lip. The patient was put upon syphilitic treatment and the lesions rapidly cleared up.

Dr. Aiken reported two cases of tuberculosis. One was in a boy of fourteen in whom he could detect no chest symptoms but found tubercle bacilli in the sputum. The boy would take no treatment, looked good, said he felt good, continued at his work in a grocery store, and lived in unfavorable surroundings. Dr. Aiken wished to compare this case with No. 2, that of a painter, aged thirty-two, who had night sweats, gave no family history of tuberculosis and had no chest symptoms until late, but there were present tubercle bacilli in the sputum. This man gave up his work, lived in open air, had the best of food and care, coöperated with the doctor in his treatment but, in spite of all, the disease progressed rapidly and the patient died. In case No. 1, with no medical attention and care, after five years the patient is apparently well.

Dr. W. W. Woodward reported a case of meningitis with extremely high temperature, 106°, for a number of days, and recovery. He reported also a series of scarlet fever cases in which there was no rash but all the other symptoms of scarlet fever with extensive desquamation.

Dr. Edward Kerr: Conservative surgery is a good thing to think about but very often if followed is disappointing. I wish to cite a case where it proved triumphant. A woman was admitted to a hospital with pain in lower abdomen, on right side a large mass. Abdominal section revealed a pus tube on right and a cystic ovary on left. Pus tube was removed, cyst on left ovary was opened and drained and ovary left intact. Woman made an uneventful recovery. She became pregnant and was delivered of a healthy child. She writes me at this time that she has had no trouble whatever and is pregnant for the second time. The second case is one of extraperitonal Cesarean section. Woman, with her second child, had hemorrhage at seven and one half months but did not consult me. One month later I was sent for in the night; she had had a violent hemorrhage; blood had soaked through the bed and over the floor. I at once packed the vagina and cervix and waited twenty-four hours but there was no signs of beginning labor. Packing was removed and in five days she had another severe hemorrhage which necessitated packing again; no labor pains appearing after forty-eight hours the packing was removed and a large piece of placenta was also removed. Symptoms of infection appearing it was decided to do Cesarean section by the Hirst extraperitoneal method. Woman was removed to hospital and operation performed. She was delivered of a healthy child but developed sepsis and had a stormy road to travel for a few days. By the end of the first week recovery was assured; in eighteen days mother and baby left the hospital and both are in excellent health to-day. After two weeks the milk secretion being almost gone on account of septic symptoms it was thought advisable to give extract of pituitary gland every three hours; this brought back the milk secretion in plenty and the mother is still nursing her baby which is now seven months old.

Dr. Burkartmaier reported a case of acidosis with a marked scarlatinal form of eruption which was very hard to diagnose.

D. Edgar Hutchison, Reporter.

CLINTON—January.

The Clinton County Society held its annual meeting at the Lock Haven Hospital, January 22. Officers were elected for the ensuing year. Dr. Joseph M. Corson of Chatham Run was elected delegate to the next session of the state society, with Dr. J. J. Lubrecht as alternate. Retiring President Welliver deliverd an address on "Anesthetics" which was generally discussed.

Dr. Joseph M. Corson reported a case of slough of abdominal wall, the result of typhoid fever, with recovery; also a case where a man had severed his thumb except a small portion of skin, and three hours after the accident it was sewed on and the union successful.

R. B. Watson, Reporter.

DAUPHIN—January.

The Dauphin County Society met in regular session January 5, 1915, at 8:30 p.m., with Dr. John F. Culp in the chair. Immediately following the annual election of officers, Dr. W. T. Douglass, president elect, took the chair.

The paper "A Broader View" by Retiring President Culp dealt with the relationship of the specialties in medicine to general medicine and *vice versa.* The paper brought out the fact that the specialties in medicine have the same tendencies toward narrowness of opinion, as intensiveness on the part ot those occupied in the various definite professions tends to narrow their views. When there is specialization within a profession the one who is limiting his activities to that particular work will see things only as they pertain to the specialty, similarly as the one who enters upon a profession sees matters only as they have connection with that certain profession. To obtain the topography of a country we should mount to a height and look down, rather than remain in a valley and look up.

The amount of knowledge to be obtained is so vast that, in a lifetime one can not attain all of it. Research covers so large a field that thoroughness can be accomplished only when the efforts are confined to certain definite and limited undertakings. The specialties, therefore, are developed, because there are those who desire to derive as much knowledge as possible from their particular branch of the subject.

In order to do efficient work in a specialty in medicine it is just as important for the specialist to know something about general medicine as it is for the artisan following a special form of his craft to know something about the whole of that avocation. The specialist should have several years in general practice during which time he can study the effects of the various diseased conditions upon contiguous and remote parts. Having observed these results before he begins to unravel the intricacies of the certain portion of the body which he has chosen as his pursuit in the medical profession, he will be able to distinguish the purely local condition from the local manifestation of a remote condition. The otologist for example will be able to recognize the tinnitis, vertigo, etc., of the anemic patient to be due to the general depression because of the impoverished blood supply rather than a catarrhal otitis media or vestibular trouble. Ability to distinguish, because of a knowledge of general medicine, will frequently avoid the unpleasantness of having a patient remark that he has had an operation but has not been relieved of his suffering. In conclusion, to quote the author, "What we physicians of every shade of practice need is a broader view and ability to consider man as the Creator's most wonderful creation, a being not made up of disjointed parts and organs, but a being whose tissues are blended into one harmonious whole and all under control of a reasoning power called the mind and soul."

H. Hershey Farnsler, Reporter.

FAYETTE—January, February.

The meeting of the Fayette County Society was held at Uniontown, January 7. There were sixty-seven members present and after the minutes of the December meeting had been read and approved the election of officers for the present year was held. The members then went to the Brunswick Hotel where a lunch was served.

The report of the secretary shows the society in very good condition having obtained ten new members during the year which brings the total membership up to 120 on January 1. There were ten meetings held during the year 1914 with an average attendance of thirty-eight.

At the meeting held during the afternoon and evening of February 4, Drs. John Gibbon and Alfred Stengel of Philadelphia held a clinic at the Uniontown Hospital.

Dr. Gibbon conducted the surgical clinic examining and lecturing on gall-bladder and stomach cases while Dr. Stengel conducted the medical clinic on heart and lung conditions. There were twelve cases shown and the afternoon was a most instructive one for the ninety-four doctors present.

At 7 P.M. one hundred and six members assembled in the Laurel Club as guests of Dr. L. S. Gaddis for a banquet in honor of the guests, Drs. Stengel and Gibbon.

G. H. ROBINSON, Reporter.

JEFFERSON—DECEMBER.

The Jefferson County Society met in Brookville, December 29, at 2:30 P.M., with eighteen members present.

Dr. S. M. Free, chairman, reported that the Program Committee recommended that the annual program consist (a) of one or more papers, by our own members, occasionally interspersed by a paper or an address by an outsider, (b) of a résumé of scientific work now being done in some particular line, and (c) of reports of cases, supplemented by accurate case histories and careful observations. On motion, the suggestion was adopted and the committee continued with instructions to report in January and to have the entire program outlined and printed for distribution at an early date. On motion of Dr. Free, it was decided that "any member agreeing to present a paper at a given time and failing to respond, when it has been properly assigned a place on the program, shall be fined five dollars, unless excused by a majority vote of the society in regular session.

Officers were nominated for 1915.

The Report of the Committee on New Constitution and By-Laws was presented and the society immediately proceeded to adopt a new constitution, nearly identical with the model supplied us by the state society, the most important change being the change of date of meeting from the fourth Friday, to the second Thursday of each month. The committee was continued and authorized to have the new Constitution printed for distribution.

The president appointed Drs. T. F. Nolan, H. B. King, and J. B. Neale a committee on resolutions on the deaths of Dr. Addison H. Bowser and Dr. John W. Foust, both of Reynoldsville.

The scientific program consisted of a paper on "The Interpretation of Pain and the Indications for Surgical Interference," by Dr. John H. Murray. The divisions of gastric and abdominal pain were covered in a comprehensive manner. Some exceptions in regard to the indications for surgical interference were taken by Dr. Free and other surgeons present, but the general trend of the discussion was along conservative lines.

Dr. Leo Z. Hayes reported a case of intestinal obstruction by a fold of Meckel's diverticulum which had become adherent to the abdominal wall at the umbilicus.

Dr. I. R. Mohney reported a case which, after the patient having passed through the hands of several surgeons and undergoing an abdominal section, turned out to be a case of impacted rectum. After unpacking the rectum and preventing the recurrence of the trouble, the patient immediately regained normal health.

NORMAN C. MILLS, Reporter.

LACKAWANNA—JANUARY, FEBRUARY.

At the meeting of the Lackawanna County Society, January 19, Dr. Gilbert D. Murray read a paper on "A Study of 848 Cases of Tonsillectomy." This paper will appear later in the JOURNAL.

At a meeting held in the High School Auditorium, January 26, to which the public was invited, a paper was read by Dr. C. E. Thompson on "Civilization, Education and Philanthropy." The paper was discussed by the following:—

1. Influence of Physical Geography on Civilization, Prof. Burdick of Local High School.
2. The Fall of Mexican Civilization, Prof. Rowland Davies.
3. Is Our System of Education as Carried Out Productive of the Best Results in the Development of the Energies of the Child? Prof. Gordon Evans of Local High School.
4. Has Overabundant Natural Resources Retarded Civilization in Brazil? Prof. Davis, curator of Everhart Museum.
5. Philanthropy, Dr. Woodstock.
6. Playgrounds, Prof. Jackson, Bureau of City Playgrounds.
7. Philanthropy as Exemplified by Henry Ford, Dr. Capwell.
8. Effects of Charity and Philanthropy on the Development of Energy in Our People, Mr. Willows, director of Organized City Charities.
9. State Examination Every Five Years for Teachers, Lawyers and Physicians, Dr. Wainwright.
10. General discussion by the society and guests.

At the regular meeting of the society held in its room on February 2, Dr. F. W. Hollister presented a paper on "The More Common Diseases of the Eye."

A. E. DAVIS, Reporter.

LANCASTER—JANUARY.

The meeting of the Lancaster City and County Society was held in Malta Temple, January 6, with fifty-three members present, when officers for 1915 were elected. Treasurer Appel reported a balance of $299.81. Secretary Kinzer reported the present membership to be 145, the membership January 1, 1914, 148; new members added during the year, 10; members lost by death 3; members dropped for non-payment of dues 7; resigned 2; dropped for fee-splitting 1. The annual banquet at the Hamilton Club took the place of the February meeting, and the meeting of the Fourth Censorial District held at Mt. Gretna took the place of the August meeting. A special meeting was held June 12 at the office of the secretary to draw up resolutions and enter a protest against the passage of the Nelson Amendment to the Harrison Antinarcotic Bill.

The Trustees reported that there was on deposit in the Lancaster Trust Company $2004.18, which will be due February 8, 1915. Interest will be $80.17 which is to be added to the above.

The Library Committee reported that there are 975 volumes in the library; during the year 175 were added.

The Publication Committee reported that the income of the *Bulletin* was increased and the cost to the society in 1914 was $46.90 less than in 1913; and it is hoped that next year it can be published without any cost to the society. The new constitution and by-laws were read by the secretary and were adopted by the society. A motion was made and seconded and passed that the members of this society doing lodge practice be allowed to fill out their unexpired terms.

Dr. A. V. Walters, the retiring president, in a few well-chosen remarks, thanked the members for the interest taken during the year and Dr. John L. Atlee took the chair.

H. B. Davis, Reporter.

MONTGOMERY—December.

The meeting of the Montgomery County Society was held at Charity Hospital, Norristown, December 2, 1914.

Dr. Allan Smith of the University of Pennsylvania, honored the society with an address on "Anemia." This was one of the most interesting talks that the society has had for years, and those who were not there indeed missed a treat. He spoke in part as follows: If we wish to cure anemia we must find out the cause. All anemias must be regarded as secondary, for in the so-called primary anemias we have not found a true cause. Anemia may be due to defective metabolism or probably parasitic poisoning. The cause may be pus germs, hook worm, tape worm, or very possibly ameba, for in many cases of pyorrhea alveolaris a marked anemia is found. To rid the mouth of the ameba, emetin is used in doses one fourth to one half grain hypodermically, or one drop of a one half of one per cent. solution is placed in each pus pocket.

In three cases of pernicious anemia in which emetin was used, one patient recovered who had a red cell count of less than 1,000,000 and hemoglobin 28 per cent. One case was benefited, and in one case there was no influence at all. Iron and arsenic had been used in both these cases with no results. Any anemia is pernicious when serious. The pernicious stage is established when blood-cell formation or nutrition of the blood falls below par, or there is a failure in some link of the digestive tract.

Dr. Smith then mentioned a case of myelogenous leukemia under treatment in the hospital. Emetin was used in large doses under the supposition that the disease was due to sporozoa. After the first injection the great pain over the spleen ceased and the patient slept. When the pain returned the patient pleaded for an injection. There was no improvement in the blood count or in the size of the spleen.

Dr. Alexander O'Neal reported a case of Banti's Disease.

At the meeting of December 16 Dr. Daniel J. McCarthy gave a talk on "The Physical Basis of Mental Disease." In speaking of the causation of insanity he gave his causes: (1) Heredity; (2) injury or destruction of the brain substance either from traumatism or tumor formation; (3) poisons generated in the system, caused by visceral disease; (4) poisons introduced from without, acting directly on the nervous system, such as drugs; (5) poisons introduced from without, as bacterial vaccines; (6) perversion of normal secretions. Dr. McCarthy then went on to show how physical conditions may cause insanity. In the vast majority of the insane the nervous system could be considered relatively normal. Even as diabetes is not a disease of the kidneys, although manifest in the urine, so many cases of insanity are not due to changes in the nervous system.

Practically all insane patients should first be admitted to a general hospital for some physical cause of the disease may be found, instead of admitting them at once to a crowded insane asylum where the already overworked doctors have little time to go over their cases thoroughly.

Drs. Swalm and Petery of the State Hospital took a prominent part in the discussion, as did many of the others.

Dr. McCarthy was given a vote of thanks for his excellent lecture.

Edgar Stanley Buyers, Reporter.

MONTOUR—January.

The meeting of the Montour County Society was held January 15, at the State Hospital for the Insane, with nine members present. Minutes of the previous meeting read and approved. The address by Retiring President Sandel, particularly pertaining to "Medical Fees in Montour County," called forth considerable discussion, after which the following schedule was adopted: Visits $1.00; office consultations, 50c, medicine extra; obstetrical visits

$10.00; fractures $5.00 to $25.00; dislocations $2.50 to $10.00; administering anesthetic in dental chair, $2.00; consultations $3.00 to $5.00. After the treasury was very liberally replenished by the members paying their dues, the society adjourned.

C. SHULTZ, Reporter.

NORTHAMPTON—DECEMBER, JANUARY.

The Northampton County Society met at the Easton Public Library, December 18, Dr. McIlhaney presiding. Dr. W. P. O. Thomason reported concerning a plan he had previously elaborated and presented to the society, providing for the establishment of a sufficiently large fund, by assessment, to protect all members of our state society against malpractice suits, paying costs of all approved suits and also the fine imposed in such suits. The plan would do away entirely with insurance against malpractice suits at a cost to all members far less than is now collected every year by the insurance companies. Legal opinion as to whether or not the state society could engage in what would really amount to the insurance business revealed difficulties which threatened the feasibility of carrying out this ably conceived and very desirable provision. However, further advice is to be obtained and an effort made to have the society's rights under its charter and the "insurance" fund compatibly accomplishable. If the charter of the state society will legally offer sufficient opportunity for the creation of such a fund, the doctor in our state will receive the protection he needs and deserves at the very minimum cost. Dr. Thomason will report the progress at our next meeting.

The constitution which the state society suggests that all county societies shall adopt was discussed and final action will be taken at the January meeting.

Dr. E. M. Green gave an impromptu clinic at the Easton Hospital. Drs. Green and J. E. Fretz demonstrated the use of the electrocardiogram and showed other interesting cases in the medical ward.

The January meeting was held in the Easton Public Library, President Reichard in the chair. The constitution was read, amended in a few instances and adopted. The instances of amendment were: Dues, $5.00 per annum; meetings, the third Friday of the month, regular meetings to occur every month except July and August, no meeting occurring in July and the outing meeting to be in August. The annual reports were read by the recording secretary and the treasurer. The president's annual address was listened to with keenest attention, and it was voted that his paper be offered for publication in the JOURNAL. Officers were elected for 1915. The society will continue as previously to meet at Easton Public Library, with the privilege of arranging for meetings elsewhere if acted upon at a regular meeting.

W. D. CHASE, Reporter.

PHILADELPHIA—DECEMBER.

At the meeting, December 9, at 8:15 P.M., held in the auditorium of the Manufacturer's Club, Broad and Walnut Streets, with President Robinson in the Chair. a symposium on "Retrodisplacement of the Uterus" was presented.

"The Gilliam Operation for Deviations of the Uterus" was presented by Dr. D. Tod Gilliam, Columbus, Ohio: I regret the necessity of using my own name to designate this operation. As doubtless most of you know, this is the pioneer ventrosuspension of the uterus by means of the round ligaments in which the ligaments are left intact in their natural investments. The many modifications of the original operation emphasize the value of its principle. The following is a description of the operation as I do it to-day:—

1. An abdominal incision three or four inches in length is made in the median line at the usual site between the umbilicus and pubes.

2. The adhesions are broken up and the fundus brought forward.

3. By lifting up the broad ligament of one side on the tip of a finger applied to the posterior surface, the round ligament is brought into view and is picked up by a bullet forceps.

4. Selecting a point an inch and a half from the uterus, a thread is passed under the round ligament and the ends of the thread are brought out of the opening and secured in the bite of clamp forceps which is laid on the surface of the abdomen.

5. The other ligament is sought for and secured in the same manner.

6. At a point about one inch and a half above the pubes, the peritoneum, muscle and fascia are caught up by a volsella and pinned together, care being taken that the edges of these layers are approximately in line.

7. Traction is now made, and with a claw retractor the skin and superficial fat are drawn in the opposite direction and by a sweep of the knife the face of the fascia is laid bare.

8. With a Cleveland ligature carrier or some similar instrument a stab wound is made from the surface of the fascia into the peritoneal cavity, one inch from the edge of the abdominal incision. The jaws are separated and by an outward movement of the handle brought into plain view at the large opening. The thread which loops the round ligament is now placed in the jaws, the clamp forceps removed and the ligature carrier withdrawn, bringing with it the thread and the ligament.

9. While the ligament is held taut, with its loop end just above the surface of the fascia, a catgut suture is passed through it, including the tissues on either side, then back again where it is tied. This is cut close to the knot, and the suspending thread removed, preferably by clipping it close to where it passes under the ligament, to avoid possible contamination.

10. The volsella and retractor being removed, the

other side is dealt with in like manner and the incision closed.

After both ligaments have been fastened it will be noted that the conditions are such that strangulation of the bowel is scarcely conceivable. The uterus rests easily and naturally on the bladder from which it can be raised to a position little short of vertical. So far as I know there has not been a single instance in which pregnancy or parturition has been embarrassed and there have been no untoward results of any kind. In a few isolated cases in which it was averred that intestinal obstruction occurred the condition should not be credited to the operation *per se*. An additional advantage of the operation is that the intestines keep out of the danger zone. So far as my personal knowledge goes the failures of the operation have been very few. The majority of these, it may be said, have been due to insecure attachment to the abdominal walls. Since adopting precautionary measures against this accident I have had no failures of which I am aware. The operation is simple, safe and efficient and because of this it has won its way around the world.

"Operative Treatment of Retroversion of the Uterus" was presented by Dr. Edwin B. Cragin, professor of obstetrics and gynecology, Columbia University, New York City: In the month of June, 1905, impressed with the number of recurrences of retroversion following the Alexander operation by different men, and with the dystocia requiring Cesarean section for delivery after ventrofixation and even ventrosuspension, I turned with great hope to the principle of the Gilliam operation of shortening the round ligament on each side by drawing a fold of it through the rectus muscle. After performing two or three of these operations through a median incision I adopted the Pfannenstiel incision because, among other reasons, of its simplicity of technic, the safety of the cicatrix and the cosmetic result. Because of an unsatisfactory anatomical result in one case I have been careful since November, 1905, so to perform the operation that the loop of round ligament when sutured lies just beneath the fascia and does not perforate it. Since then I have had no further trouble with sloughing of the ligament. Any operation for retroversion of the uterus, to be called satisfactory, must be (1) safe; (2) permanent in its results; and (3) must not interfere with pregnancy, parturition or the puerperium.

Of 400 operations during the nine years ending last June, I regret to say that I lost one. This was a complicated case in which nothing but an intra-abdominal operation would have met the indications. In the series of 400 operations there were 127 complicated cases. It does not seem, therefore, that the loss of one uncomplicated case should put the operation outside the realm of safety. In this series the appendix was removed in 37 ward, and 37 private cases and four returned for appendectomies. Regarding permanence in results in 164 cases heard from in the series of 400, and calling a uterus which lies in the axis of the vagina a partial anatomical failure, we have two partial anatomical failures; two complete anatomical failures, and two symptomatic failures, although anatomical successes. By the criterion of maternity, we have to report that of the 164 cases heard from, pregnancy has occurred in 35, and so far as I have learned, without marked discomfort. Of the 35 who became pregnant after the operation 22 went to term and bore a living child; one has had two living children since the operation; nine are now in the course of pregnancy; four have had miscarriages induced or natural. Of these four, one has had seven induced abortions since my operation; one has had two. One miscarried after a fall, one had a miscarriage without assignable cause, but she had one living child before this miscarriage and since my operation, and is now advanced about four months in her third pregnancy. This gives one miscarriage after a fall and one miscarriage without assignable cause in 38 pregnancies, which does not seem to the writer a greater frequency than one would expect in women not operated upon. One of these women became pregnant at once after leaving the hospital; another menstruated only once before becoming pregnant. In none of the cases which went to term have I been able to get any history of dystocia. In the cases seen by the writer and in those reported upon by physicians in attendance the puerperium, including the involution of the uterus, has been normal. The absence of hernia in any of the cases heard from in the series of 400 suggests that leaving the opening in the rectus just large enough for the round ligament loop makes the occurrence of hernia very improbable.

"The Surgical Treatment of Retroversion of the Uterus with Special Reference to the Lower Pole" was presented by Dr. J. Wesley Bovée: That retroversion of the uterus has been so persistently regarded as a medical or surgical entity is to be deplored. In reality it is no more than a symptom or complication, discovered alone by accident when investigation is being made for a condition having a true symptomatology. Hence it is only a complication, but one requiring correction. I am convinced that uncomplicated uterine retroversion has no symptoms. To intelligently select the proper corrective operation an understanding of the forces maintaining the uterus in what may be called its normal position is essential. In my opinion it hardly seems proper to rely entirely upon shortening the round ligament to correct retroversion of the uterus. I believe success will attend this procedure only when a strong ligament exists or is strengthened by plication and markedly shortening it.

My views regarding operations for retroversion of the uterus are, briefly, as follows: (1) Round ligament shortening, *per se*, does not usually contain all required elements in the treatment of retroversion of the uterus, though it may end the displacement. (2) No single operation devised is more successful than it. (3) The displacement is more certainly influenced by the ligamentation at the lower pole than by other forces and therefore, the proper adjustment of these forces is of paramount importance. (4) Without predilection for any particular operation the exact cause or causes of the displacement must be sought and the operation or operations thus indicated performed. (5) The vaginal route alone is not applicable except in the roomy vagina of the multipara or when the operation is limited to the anterior vaginal wall and broad ligament bases. (6) The round ligament shortening is often advisable as an adjunct to operation on the ligaments at the lower pole of the uterus.

"The Operative Treatment of Retrodisplacements of the Uterus" was presented by Dr. E. E. Montgomery: An operation is described modifying the Gilliam operation. A loop of round ligament has a ligature passed around it, the ends of which are threaded into a Deschamps needle. The ligament is seized with hemostats external to the point about which ligature is thrown around it, an opening made in the anterior surface of the broad ligament and through this opening the needle carrying the suture is passed until it reaches the point where the peritoneum is reflexed on the anterior abdominal wall. When hugging the peritoneum it is pushed through and brought out on aponeurosis, unthreaded and the ends of loop secured with hemostats. A similar course is followed on the other ligament. Holding the ends of ligature tense, a pair of sharp-pointed scissors, closed, are inserted along the ligature slightly separated when traction generally results in pulling loop through. The fatty tissue is pushed back, exposing the aponeurosis of this loop secured by chromic catgut sutures on either side taking up the approximal and distal ends of loop. I first performed this operation on June 11, 1904, and have had in all 756 cases. In nearly all of these cases this operation has been a link in a chain of operations designed to correct various pathological conditions associated with displacement. The principal operations in their order of frequency have been curetment 632, appendectomy 507, perineorrhaphy 239, trachelorrhaphy 175, amputation of cervix 104, resection of ovary 58 and anterior colporrhaphy 56. I have had five deaths all of which occurred prior to 1909. The last 400 cases have been without mortality. The advantages of the operation are: (1) it is easily accomplished; (2) it leaves no injured surfaces to favor adhesions; (3) it affords support by structures capable of evolution and involution, and consequently, well calculated to stand the test of subsequent gestation.

"Principles and Practice in the Surgical Treatment of Retrodisplacements of the Uterus," by Dr. J. Clarence Webster was read by Dr. Stephen E. Tracy: In the practice which I have gradually developed in the course of years in the surgical treatment of retrodisplacement of the uterus I have endeavored to carry out certain principles: (1) The operation should restore the soft parts of the pelvis as nearly as possible to normal. (2) In the child-bearing period the operation should not introduce any factor which interferes with the safety of pregnancy and labor. (3) It should also be of such a character as to make it possible for the woman to bear children with the reasonable hope that there shall be no recurrence of the displacement. (4) The operation must be carried out so as to make thorough exploration of the pelvic cavity possible so that all associated pathological conditions may be dealt with. The technic employed must not cause such trauma as will give rise to later trouble.

The anatomical relations of the uterus should be constantly borne in mind. I have long since abandoned all operative procedures carried out through a vaginal incision, such as shortening of the round or uterosacral ligaments, vaginal or vesical fixation; also all procedures carried out by the abdominal route resulting in the slinging of the uterus from the abdominal wall by an artificial band, or in the pulling of the fundus toward the parietes by the shortening of the round ligaments. A damaged pelvic floor must always be repaired. This is the largest contributing factor to success. The abdomen should be opened by the suprapubic mesial incision, when the procedure is determined by existing conditions. In a typical uncomplicated case I first carry out what is termed "shortening of the uterosacral ligaments," but what is really the making of new ligaments out of the parietal peritoneum and subjacent tissue. I always use linen sutures in making these ligaments to ensure development of fibrous tissue. I then cause the fundus of the uterus to be directed forwards to the pubes in its normal position by shortening the round ligaments and stitching them securely to the upper part of the posterior surface of the uterus. The broad ligament is perforated with a curved forceps immediately under the utero-ovarian ligament close to the uterus. Emerging just above or behind the round ligament an inch or more (according to the length of the stretched ligament) from its uterine end the forceps grasps the ligament and pulls it through the opening, doubling it on the back of the uterus. This bent portion is spread out as widely as possible, the smooth peritoneal surface being uppermost (superficial). The under surface is then stitched to the uterus with linen suture. The latter is completely buried under the ligament the edges of which are stitched to the uterus with catgut. The other round ligament is then similarly dealt with. The next stage is important,—the closing of the openings in the broad ligaments, stitching their edges to the round ligaments. When the uterus is large, the level of the utero-ovarian ligament abnormally low, or the outer ends of the round ligaments much thinned, I stitch the round ligaments with linen to the edge of the uterus immediately in front of and above the opening made in the broad ligament. When the operation is accompanied by the removal of a tube or tube and ovary on one side, the round ligament is shortened on this side by doubling it back directly without perforating the broad ligament, care being taken to cover all raw surfaces. In bilateral removal this is done on both sides. In the after care all forms of strain upon the stitched parts must be avoided for several months. Pregnancy should not be allowed to commence until a year has elapsed and then it is advisable that a vaginal pessary should be worn during the first three months. After the eighth week of the puerperium it is a wise precaution to use a Hodge or Albert Smith pessary for several months.

Dr. J. Montgomery Baldy: I have prepared no paper. I thought that with the distinguished guests present, I would not occupy the time with a formal communication. I am not at all sure that I am even justified in being present and taking part in such a meeting, holding the views that I do in regard to retrodisplacement. The details of the operation bearing my name have been given in the main in the paper by Dr. Webster. As a matter of historic interest, great injustice has been done Andrews of Chicago who did practically this operation a year prior to the work of Dr. Webster and my own. As to the justification of a meeting of this kind, it goes without saying that if retrodisplacement causes the symptoms for which we operate, then any operation—it makes no difference which—that will replace the uterus, will cure those symptoms. The trouble is that in a meeting of this kind too much prominence is given to retrodisplacements and patients are operated on who ought never to be touched for retrodisplacement. Instead of bothering ourselves about what each one is doing perfectly, because we would not do our individual operations were we not getting satisfactory results, we should replace the uterus if that is causing symptoms and keep it replaced by any satisfactory method and that will cure the symptoms. As a matter of fact in nine out of ten cases the symptoms do not come from it at all. It is the complications, in the majority of cases that are giving the symptoms, and I should hate to tell Dr. Cragin, warm, old, intimate friend that he is, what I think of him for doing the number of retrodisplacement operations that he has done in the last few years,—not to be at all personal, I will include all the gentlemen on the platform.

Dr. Barton Cooke Hirst described a modification of the Alexander operation through a Pfannenstiel incision permitting inspection of the appendages and the appendix and united with a temporary suspension of the uterus.

"Modification of the Alexander Operation" was presented by Dr. Barton Cooke Hirst. I still believe in the treatment of retroversion of the uterus. When a woman comes to me with the train of symptoms attending this condition, and I cure her retroflexion, at the same time giving her symptomatic relief, I feel that I have done her some good. Only within the last two years, however, have I felt satisfied with my operative method. I submit that the ideal operation for retroversion of the uterus is (1) one that will restore the uterus to its natural position; (2) give the patient symptomatic relief; (3) withstand the strain of subsequent pregnancies; (4) does not complicate subsequent pregnancies or labor; (5) and causes no subsequent complications such as obstruction of the bowels. Conditions one and two are met by shortening of the round ligaments. Regarding the third requirement, in over twenty years experience, the Alexander operation has given the smallest number of recurrences; and, what is particularly important, among the few failures, not one, to my knowledge, has followed subsequent childbearing. In one case there were five childbirths; in another case, four and not one patient has yet reported complications. The Pfannenstiel operation also obviates the defect of overlooking intraäbdominal complications. The detailed technic of the operation is best described by reference to a series of illustrations. The withdrawal of the round ligament for a sufficient length is a point on which many surgeons go astray. A single stitch of No. 33 catgut is used temporarily to suspend the uterus and to take the strain off the round ligaments. Incision of the peritoneum exposes to view the abdominal organs. The uterus is seized by a Summers' clamp, which is a convenient instrument. Closure of the peritoneal incision occupies only a few minutes. Then the round ligaments are fastened by a series of sutures to Poupart's ligament. The fascia is united and the skin is closed as in an ordinary abdominal section.

Dr. Howard A. Kelly: The history of retrodisplacements of the uterus may be divided into four periods:—

1. The ancients down to about the year 1600: Prolapse was recognized, but otherwise little was known of displacements which were confused with wanderings of the uterus into various other parts of the body and various imaginary conditions, such as dryness, softness, distortion, compression.

2. From 1600 to about 1810: During these years there was an increasingly clear recognition of the extreme danger of retroflexion of the pregnant uterus. William Hunter, in 1774, reports a case treated by emptying the bladder, putting the patient in the knee-chest posture, and endeavoring to replace the uterus by using the fingers of one hand

in the rectum pushing in the sac and those of the other hand in the vagina manipulating the cervix. The patient died and a postmortem showed that the womb was so tightly wedged in the pelvis that the symphysis had to be divided to get it out. During this period the method of examination was the introduction of a finger into the vagina, technically called the "touch." Retroflexion apart from pregnancy had to be defined as "retroflexion in vacuity." The first case reported in this country was by Dr. Holyoke of Salem, Mass., in 1806.

3. From 1810 to 1885: It now became increasingly evident that retrodisplacements were common. Sir James Y. Simpson almost felt as if he had discovered them with his uterine sound. A number of works in this period were devoted to the subject, amongst which I would mention especially that of Laroux, published in 1844. This may be called the pessary period of gynecology, when great reputations were made by the invention of a new pessary, and when pessaries were patented and even hawked from door to door.

4. The last or operative period: This began in the eighties of the last century, when the profession finally broke away from the dominion of the pessary and brought retroflexion operations into the category of other gynecological procedures which were rapidly becoming almost exclusively surgical. Since that date the pessary occupied a very subordinate place.

As to the frequency of retroflexions, I have found from the statistics at the Johns Hopkins Hospital that out of 13,600 gynecological cases, there were 1886 of retroflexion. Of these 415 were uncomplicated. Of 1000 operations of all kinds performed there between August 27, 1904 and November 9, 1905, there were 95 cases of retroflexion.

My own surgical operation, which was done in 1885 and published January, 1887 (*Am. Jour. Obst.*, xx., 33), I have abandoned after doing it between 700 and 800 times, on account of the occasional accidents or a difficult birth. I now use an operation by which a single silk or linen thread on either side encircles the round ligament and draws it forward to the abdominal wall, where these are tied to the deep fascia over the rectus muscles. The peritoneum between the abdominal wall and the ligament must be picked up at every half inch, in order not to leave a hole for the bowel to slip through. I have done this eighty times and believe it will prove to be the most satisfactory operation yet devised.

I present here a record of over fifty different operations, all devised for the purpose of correcting retrodisplacements,—an extraordinary exhibit of the fertility of the surgical imagination. I expect before I finish to bring this collection nearly to 100.

Dr. John G. Clark: The point made by several of the speakers that the retrodisplacement many times gives no symptoms is one of the strongest arguments for any operation that gives a liberal insight into the abdominal cavity so that all complicating conditions may be corrected.

Dr. John B. Deaver: I rise not to enter into the discussion of the scientific side of this question which has been so ably done, but simply to ask, What could have been more fitting than to have had this meeting in this beautiful room with these distinguished gentlemen, who have done so much for the welfare of women, as guests? Many of these gentlemen have come from a distance, our dear old friend, Dr. Gilliam from Ohio; my dear friend, Cragin of New York, a suburb of Philadelphia; our most brilliant Kelly, who handles the Greek, the French and the Italian with as much ease as we handle the English, and my distinguished friend, Dr. Bovée, who is most expert with the knife. I would also congratulate the president of this society and his confreres upon the great success of this meeting which has given us food for much thought.

WESTMORELAND—February.

Westmoreland County's February meeting marked a continuance of the excellently representative attendance dating from the latter months of 1914. Sessions continue to attract more and more of those members who have been more or less frequent absentees. After all, snappy, up-to-the-minute, red-blood sessions are surely the means of calling out the attendance, making and retaining the interest and drawing the members back in a month.

"What Can the General Practitioner Do with the Microscope?" was read by Dr. W. M. Bortz of Greensburg, whose ability in the use of that instrument is unquestioned. Dr. Bortz very kindly prepared and presented his paper in a style and manner which precluded any possibility of criticism on the score of "too technical" or "ultra-scientific." Under the heads of urinalysis, blood examination and pus and sputum work the writer disclosed the possibilities, even the necessities, of microscopic aid.

Dr. C. E. Snyder discussed "Improvements in Our Organization and Profession." His Honor, the Mayor of Greensburg, who is also Dr. Snyder, is of the opinion that education is only continued by consecutive study and is only keenly sharpened by debate as, "I am convinced that the more we meet and discuss those subjects pertaining to our profession the more harmonious we become." Dr. Snyder, and it seems wisely, advises the need of the regular medical society for greater publicity as to its achievements of prophylaxis, cure, etc.; publicity secured, especially in newspapers, and not covering work of individual physicians but general light on achievements of investigation, sanitation, etc. This particular matter is vital to the profession at large and sooner or later the veil which has concealed the profession from the public must be torn away.

Excellent and animated discussion freely followed the papers. Dr. R. L. Wilson, whose work and opinion on microscopy and allied sciences are most efficient and valuable, spoke on the desirability and comparative simplicity of diagnosis of typhoid fever by culture from blood of causative bacilli. Drs. Reidt and Marchand paid high tribute to the value of microscopic corroboration as applied to their individual work. Dr. L. B. Smith, fearing the opinion would be unanimous, shook his mane and with head lowered rushed into the fray, sounding his characteristic, clarion-like note of warning which was a general denial of all that had been, or might be, said. Dr. W. H. Taylor majestically swayed the society by a "few remarks" having their culmination in a grand climax of high-frequency oratory, taking for its ascendancy a one-step review of United States history. Dr. McKee, a voice specialist and coconspirator of Dr. Taylor during office hours, vehemently expressed his surprise and chagrin that members of a presumably wide-awake, educated medical body would calmly permit "Doctor Bill" Taylor to put one over on them even in an outburst of patriotic enthusiasm by saying " . . . during the siege of Yorktown in the Civil War." T. denies the statement as an offspring of his tongue; McK. swears to parentage; society absolutely neutral, so casting the burden of proof or innocence on parties of the first part.

D. Allison Walker, Reporter.

YORK—January.

The York County Society held its forty-first annual meeting and banquet in the Colonial Hotel, January 7, at 7:30 p.m., Dr. J. Nelson Dunnick presiding and sixty members present, this being the largest attendance in the history of the organization.

Dr. W. L. Rodman president elect of the American Medical Association, and Dr. John B. McAlister, president elect of the state society, were present as the distinguished guests of the society. The following invited guests were also present: Drs. J. T. Culp, president of the Dauphin County Society; J. W. Ellenberger and H. F. Gross, Harrisburg; T. B. Appel, trustee of the state society and councilor for this district; Samuel H. Heller, Lancaster; W. N. Keylor, Leacock; J. B. Carrell, Hatboro; G. L. Rice, McSherrystown; T. C. Miller, Abbottstown; Charles Wallace, Indiana Co.; Eugene Elgin, E. O. Miller, East Berlin; H. D. Leh, Hampton; M. M. Fleagle, G. H. Jordy, Hanover; Joseph Boyle, Baltimore; S. L. Immerman, C. M. Stephens, York Hospital.

Dr. Shatto, the incoming president, announced the following committees: Scientific Business, Drs. J. N. Dunnick, Comroe and Hartman; Director of the Pennsylvania Society for the Protection of Scientific Research, Dr. Comroe; Editorial Staff, Drs. Small, Comroe and Shatto; Executive Committee, Drs. Shatto, Comroe and Mann; Public Policy and Legislation, Drs. Holtzapple, Long and Atkins; Health and Public Instruction, Drs. Eisenhower, W. C. Stick, J. C. May, Shatto and Comroe; Red Cross Medical Work (A. M. A.); Drs. Gilbert, A. Myers, Klinedinst, Shatto and Comroe.

The banquet was the largest and most successful in the society's history. The hall was magnificently decorated with Old Glory and the flowers in season, and each physician received a silk flag and a boutonniére as a souvenir. Music was furnished by the Philharmonic Trio, and everyone present, with waving flag, sang "America" before the addresses began. Dr. J. H. Bittinger proved a most genial toastmaster. The address of Dr. J. N. Dunnick, the retiring president, which reviewed the remarkable growth of the society, was received with cheers. Addresses followed by Dr. Shatto, the incoming president, and by Drs. B. F. Spangler and E. W. Meisenhelder,Sr.; the only remaining founders of the society. When Dr. William L. Rodman was presented by the toastmaster, there was a sudden outburst of applause which lasted for some time. His address was one of those characteristic masterful pieces of oratory for which this distinguished teacher and surgeon has become noted. He laid particular stress upon the subject of medical education, and paid a most flattering tribute to the present Bureau of Medical Licensure. Dr. Rodman made a stirring appeal for a large attendance at the next meeting of the A. M. A. in San Francisco, and detailed the attractive routes and rates. He also referred very feelingly to the urgent need of food for the physicians and their families in Belgium, and in the war zone in general.

Dr. John B. McAlister received a lasting ovation when he rose to speak, in response to a worthy tribute from the toastmaster. His remarks elicited the closest attention from everyone present, and his splendid address relative to the value of medical organization made a profound impression. Dr. J. B. Carrell, in his usual happy vein, held the members' closest attention, and his recitation of several poems, one written by himself, was enthusiastically received. Dr. Theodore B. Appel spoke relative to the changes in the new by-laws, and made an appeal for prompt payment of dues. His appreciation of the York County Medical Society was kindly received. Dr. Holtzapple very appropriately referred to the deceased members of the society, and his recitation of "The Anatomy of the Soul" was well delivered and very touching, being followed by a silent toast. Additional addresses were made by Drs. Culp, Long, Keylor, Gilbert, Heller, Gable and others. Committee on Arrangements: Drs. Dunnick, Shatto and Comroe.

Julius H. Comroe, Reporter.

Of the three sugars (milk sugar, cane sugar and malt sugar) most babies will consume more of the malt sugar than of either of the others, without nutritional disorder.—C. G. Grulee, M.D.

SUPPLEMENT TO

The Pennsylvania Medical Journal

FEBRUARY, 1915

Apparently dissatisfied with the progress of their efforts to delude the public by misrepresentation of the aims, methods and results of animal experimentation, the American Anti-Vivisection Society is now tempting physicians to support its efforts. The attention of every Pennsylvania physician is called to the following letter and list of questions which some of our colleagues at least have recently received by mail.

(LETTER.)

AFFILIATED WITH THE "FEDERATED HUMANE SOCIETY OF PENNSYLVANIA."

The American Anti-Vivisection Society

SEAL

ROBERT R. LOGAN, ESQ., PRES.
SAMUEL HINDS THOMAS, ESQ., TREAS.
MRS. CAROLINE EARLE WHITE, CORR. SEC.
MRS. MARGARET M. HALVEY, REC. SEC.

KEYSTONE—RACE 10-10
BELL—LOCUST 3-90

36 South Eighteenth Street,
Philadelphia

February 12, 1915.

Dear Doctor:

Dr. Forbes Winslow, of London, who has received the highest honors both Cambridge and Oxford have to bestow, has recently declared that: "Only five per cent. of the entire medical profession are advocates of Vivisection; there are many more eminent men in my profession who are adverse to Vivisection than who are in favor of it."

Because we are eager to learn just how fully Dr. Winslow's expert opinion applies to the medical profession in this country, and also because our Society is so constantly asked for a list of physicians who do not believe in Vivisection, we are addressing this letter to the physicians of Pennsylvania, asking the favor of a reply to at least some of the enclosed questions.

When the list is published it will contain the questions asked and not only the names of those who are in favor of Vivisection, and of those who are opposed to it, but also the names of those who have failed to reply.

Your early respone will be appreciated.

Very truly yours,

[Signed] M. M. HALVEY,
Secretary.

AMERICAN ANTI-VIVISECTION SOCIETY

36 SOUTH EIGHTEENTH ST., PHILADELPHIA

(*a*) Do you approve of Experimentation upon human beings without the "intelligent consent" of the person or persons used for this purpose?........................

(*b*) If so, what persons should be used for the purpose; criminals?........................
(Several Bills to this effect have been brought before Legislatures of the country. It was also recently suggested by Alexis Carrel of the Rockefeller Institute. Paris, June, 1913.)

(*c*) Idiots?........................

(*d*) Charity patients in hospitals?........................

(*e*) Defenceless persons in our State Institutions of various kinds?........................
(Noguchi's report Journal Experimental Medicine, Pub. by Rockefeller Institute, Dec. 1, 1911. The Physicians of twenty-two different Institutions in New York State offered their patients to Noguchi for Syphilis Experiments; forty-six of them being children from two to eighteen years of age.)

(*f*) Orphans?........................
("Archives Internal Medicine," published by American Medical Association, May 15, 1908, page 407.)

(*g*) Do you believe a State has the moral right to give one group of its citizens such power over their defenceless fellow beings?........................

(*h*) Should not the unfortunate persons in various Institutions of the State be as carefully protected by the State as animals in Rescue Leagues and Societies for the Prevention of Cruelty to Animals?........................

(*i*) Do you approve of Animal Vivisection?........................

(*j*) Have you ever practised Vivisection?........................

(*k*) Have you found the practice of it essential in your own education?........................

(*l*) Have not some of the most skilful physicians and surgeons, attained skill and eminence without it?

....

(*m*) Do you hold that "The final experiment must always be on man?"........................
(E. H. Starling, M.D., F.R.S., London.)

(*n*) Have valuable truths been learned by animal experimentation which could not have been learned in other ways? If so, would you be so kind as to name some of them?........................

....

....

(*o*) Do you approve of Vivisection for the repetition of demonstrated facts?........................

(*p*) How would you suggest the animals should be supplied for this purpose?........................

....

Name..

Address..

The plain purpose of this communication is to draw the busy and unsuspecting physician into a categorical reply to questions which cannot be answered in the few words for which blank space is provided on the form. Or equally desirable, perhaps, from the anti-vivisectionist point of view would be a lengthy answer from which a few phrases could be extracted and perverted, coupled with the name of one entitled to sign himself M.D.

Obviously, in the sense in which "experimentation" is used by the anti-vivisectionists the answer of every intelligent person to question (*a*) would be an emphatic *no*. But in the sense of the word experiment as used in the statement of Prof. Starling quoted in question (*m*) the answer would be an equally positive *yes*.

What Starling said was, in substance, that after a new drug or surgical procedure had been thoroughly studied on animals and it had become evident that it would presumably be of use in combating human disease, it must of course be tried for a first time on man. The consent of the intelligent human being or of the guardians of the irresponsible person is naturally presupposed. The word experimentation is just as truly applicable to the effort of the practising physician to save the life of a patient who is *in extremis* by the application of any method not previously used by him as it is to any of the work of the investigator. The use of thyroid extract for the relief of cretinism and of pituitary extract in labor is but just beyond the stage of experiment, but would any physician criticize the man who first administered these substances to human beings?

Ehrlich made and tested in every conceivable way 605 preparations; the 606th met the requirements of the laboratory tests. Would any sane person say that he should not have tried Salvarsan on man?

In passing it may be pointed out that the inference conveyed under question (*e*) that people were inoculated with syphilis is utterly false. Noguchi's "Luetin," the subject of the tests referred to, is a dead substance incapable of propagating any disease.

Question (*i*) is almost the only honest one in the list. Questions (*j*), (*k*), (*l*) are choice examples of how not to get at the truth. "Vivisection" is not, nor has it ever been, a part of medical practice. Many prominent physicians have never practised it. That most eminent surgeon of Philadelphia, Dr. W. W. Keen, has never practised animal experimentation. Animal experimentation is now, always has been and always must be by its very nature confined to the investigator. The fair question is not, Do you practice or have you ever practised animal experimentation? But do you or do you not make use of the results of animal experimentation in your daily practice? Do you use the facts of bacteriology? Do you use the principles of aseptic surgery? Do you use drugs standardized on animals?

Every physician will agree that since animal experimentation offers the only means of studying many diseases, such as cancer, for example, it must go on until the problems of disease are solved. This, the only way of studying certain phases of disease and of teaching certain facts of medicine, must be continued in our medical schools, and since the state properly demands certain standards of our medical schools, the state should settle this "Anti-vivisection" nuisance once and for all by providing that the necessary animals may be procured from among the thousands annually destroyed in our public pounds. Such a letter as the above, if it is to elicit any real and honest information, would have to be sent to all the physicians in the state. Not having received it ourselves, we fear that it may not have reached all of our members: we are therefore publishing it here in order that we may ourselves have some information. We ask each member of the State Society to answer the following questions, tear out the slip and mail it to the *Pennsylvania Medical Journal*, Athens, Pennsylvania.

DETACH AND MAIL TO PENNSYLVANIA MEDICAL JOURNAL, ATHENS, PA.

1. Did you receive a copy of the above letter?..

2. Do you make use of the results of animal experimentation in your daily practice? (The Wassermann test? Salvarsan? Antitoxin? Aseptic surgery? Animal inoculation for tuberculosis?)..

3. Do you believe that animal experimentation in the hands of experts is essential to medical progress?..

4. Do you think the State should permit duly qualified persons to obtain animals for this work from the thousands annually condemned to death in the public pounds?..

Name..

Address..

The Pennsylvania Medical Journal.

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ADDRESS.

PRESIDENT'S ADDRESS.

BY WILLIAM DUFFIELD ROBINSON, M.D.,
Philadelphia.

(Delivered before the Philadelphia County Medical Society, January 20, 1915.)

The hour for my genuflexion of adieu is now arrived; with the adjournment of this meeting all my official connection, save only membership, with the Philadelphia County Medical Society, will have terminated. This causes me intense relief and regret commingled. The year of my greatest solicitude and hardest work is ended. When I fully awoke to the fact that I had been made your president, there came over me a state of fright at what it involved in responsibility, for furthering recognized possibilities.

To limit the work to acquiring a knowledge of the constitution and by-laws of the society, and to preside at meetings in compliance with Robert's Rules of Practice could mean only assured failure as the record of the year.

The opportunity and duty were apparent for bringing about through the society, by use of powers previously latent, an awakening of its members to greater progress and individual improvement than had been accomplished. The desire for such would have to be inspired among the laggards, and that which they needed, to approach keeping abreast of modern medical progress, must be offered in such appetizing form of presentation as would insure its acceptance. That the county medical society with its superb membership of over 1400 members, now nearly 1700, was the truly representative medical organization of our city, had to be kept in mind, and the responsibilities which, for that reason, belonged to it, should be brought to the recognition of every member. The county society's official connection with all county and state societies, and with the American Medical Association, at once establishes its representativeness to such a degree as no other society has.

The county society needed some treatment at variance with that of previous years. Men, capable, earnest, excellent workers, had, for several years past, made untiring efforts, without such results as should have been obtained. Unbiased study showed that it was not the men, but the methods that were at fault. Such men as Eaton, Longenecker, Hammond and Codman and their Boards of Directors, could not and did not fail to give the best results under the conditions or methods which had become almost traditional, and still the society was not sufficiently awakening its members to become interested and active in its work. It was with more than misgivings that a method so different from that of the society's past history, was proposed and its trial solicited.

My estimate of my capabilities did not make me feel that I could do any more than my predecessors, yet with it all I felt that the duty which the office of president involved was to make progress. The conditions seemed to make it possible that every succeeding occupant of the chair should be able to attain a greater speed than had been previously attained.

My work on the Board of Directors and Committee on Scientific Program for three years detected no fault and so gave no better promise save by new methods, which methods have now been given a partial try-out. It seemed promising that if one hundred to one hundred and fifty members of the society, selected on account of their special fitness for attaining the best results in special fields, were arranged into small committees and their interest fully aroused, good would have to result. It was thought wise by the Board of Directors to reduce the number of new committees suggested by me at the time of my taking office to twelve, as being as many as could probably be well organized and filled with sufficient enthusiasm for good results, and it was so recommended by the board to the society and favorably acted on by the society.

While the time for a complete try-out of the idea has been far too short for demonstrating the best possibilities of such a change from a very few committees, enough time has elapsed to demonstrate more gain by this method, than had been made in the previous history of the society. I believe all the present committees should be continued and others created. Where results were not achieved it was not that it could not have been, but that some of the committees did not take the duty and opportunity sufficiently seriously to do the work necessary to success. A committee can not work automatically or while it sleeps.

Of others, there is one, of the wisdom of the creation of which I have complete conviction. I feel that it is of the greatest importance that such a committee exist, for the good of both the society and the public. The committee might be entitled, the Committee on Medical and Allied Municipal Affairs. It should probably consist of from eight to twelve members, who should personally represent the most respected and competent persons in Philadelphia's medical and public affairs. This committee should represent the medical profession of Philadelphia in its relationship to all important medical affairs coming under municipal control. It should also be on call for conference when requested by any private interest, involving health, physical safety from the physician's point of consideration, sanitation, hygiene and physical, mental and moral improvement, when such committee could serve efficiently.

Assuredly such a committee with the united profession of medicine back of it could do much to correct bad ventilation, vicious air contaminated by disease germs, and the many hazards from which bodily injury is likely to result in places where our citizens in any pursuit are wont to assemble, public conveyances included.

The compass of its possibilities could only be comprehended and developed as it progressed in experience and accomplishments. It should have powers and duties similar to the Pennsylvania Prison-Visiting Society, enacted by our City Councils, which would involve periodic visits of inspection to all medical and allied institutions under municipal control or support, and its periodic reports and recommendations should be made to the proper municipal authorities, after they had been adopted by the county society or its Board of Directors. The committee should also have advisory function in important medical municipal affairs, and the securing of such advisory conferences should be a duty of the elected or appointed medical municipal officials, and record should be kept of such conferences.

Medical city officials come and go, but the county medical society goes on continuously. It is a safe proposition that the opinion of the united medical profession of our city is better and safer than that of any individual.

Now that for some years past the rules for admission to membership have been such as to attract and to have enrolled therein, many of the broadest-minded and highest-standing graduates of the homeopathic school of medicine, excellent representation of that school from among our own members could, and should be made on such committee. All the members of the committee should be public-spirited citizens who are interested in securing and maintaining absolutely the best medically, in the city's charitable and philanthropic works, institutions, etc.

A one-man power, without official medical society affiliation requirement, must have too much personal element in it, which will pretty surely be found antagonistic to the theories or convictions of each successor in the office. Only partial success can be hoped for by any city health official unless he has the medical profession which is now synonymous with the county society with and back of him.

The term of office of the members of this committee should be so arranged as to have the termination of but a part, say one fourth, occur each year, and thus those holding over will be familiar with past work. They could be in part appointed by the president and in part elected by the society, the president naming the chairman.

The existence of such a committee would be of greatly increased importance, should the director or acting director of health and charities or coroner, not be a physician. Many times officials of our city must have good reason to consult such a committee, representing all the medical profession of our city as it would. An unbroken chain of familiarity with the work and its past history would thus be developed and maintained.

The public surely feels that the Philadelphia medical profession, which I again state is the county society, should have such function. Both the public and the profession would be benefited by that which would gradually develop from the progressive and creative as well as somewhat paternal work of the committee.

Our county society has sadly lacked assertion and effort toward bringing about its proper relationship with the general public and its proper place in public health protection, etc.

Much could be added to these suggestive remarks, touching such a committee which might readily develop into a most important permanent factor in the city's health and allied works.

Another committee which I believe it would be wise to create is one on animal experimentation. It too should have powers and responsibilities granted to it by ordinance of councils and should also make periodic visits of inspection, with limited power and duty, and should report in like manner as the Committee on Medical and Allied Municipal Affairs.

It should keep the profession and nonprofessional public instructed in all proper details on the subject of animal experimentation. Such a committee, wisely selected, should be welcomed by every interest with which they would have relationship. It could remove doubt from the public mind as to the occurrence of any preventable pain or suffering on the part of the subjects of experimentation. It should learn whether any unnecessary repetition of experiments occurred, and, if so, should cause their prevention. It should be a medium of taking the public fully into medical or professional confidence and should cause such education on the subject as would quiet the false charges of bigots, fanatics and those of deplorable moral strabismus, perversion, and hysteria, poor, weak, pitiable creatures that they are.

Another committee, the possibilities in whose field of work would well justify its existence, might be entitled Committee on Unusual and Irregular Methods of Treatment.

An investigation of the right kind would be very valuable if made in the right way, by a committee of persons selected with unusual care, so as to secure in them open-mindedness and unbiased judicial qualities in weighing evidence. When truths are found the committee should report them back to the society. While it is true, time wears away all but the element of scientific fact that may lie engulfed in barnacles of impossibilities, and absurdities, in the various so-called pathies, etc., the time required is too long to permit the public to suffer, when right work by such a committee could soon show what of wheat and what of chaff there are in their composition. If elements of truth, not correctly estimated by the regular profession, are found, such would be brought forth for use as no one, neither any school, nor organized, nor unorganized body of men or women, has or can have any patent right, or exclusive control of a scientific truth of value to the regular profession of medicine in the curing of disease.

As we assume to care for the health of our people, we should protect them from false and farcical methods, claiming extraordinary and different resources from regular medicine.

Usually for a limited time, quite a proportion of the human family accept as true, any unopposed statements persistently presented to them, when later intelligent insight into such alleged truths will show their falsity and absurdity. How many people to-day have been brought to believe that the osteopath, possibly but recently a drummer or grocer's clerk, possesses a different and far more correct knowledge of anatomy, especially of the bony system, than can be secured by any student in the highest grade medical college; yet the osteopath is taught this until he believes it, and in turn proclaims it with such persistency that the nonmedical world, in proportion uncomplimentary to its intelligence and thoughtful consideration, also so believes.

The versatility and detail of work open to such a committee would be most interesting, instructive and fruitful of good, if gone into with the purpose and activity that has characterized that of several others of our new committees.

The whole population of Philadelphia needs correct instruction in matters bearing on health, and in all progress the medical profession is making a health maintenance and, therefore, disease prevention. Surely from the medical profession, on which the people depend for guidance in such affairs, should come the education they need. Not education that might result in self-treatment, but which would teach the folly of it; an education that would make every citizen an assisting agent in the preventive medicine of hygiene, sanitation, disease-contagion prevention, industrial safety, physical development, and resistance to disease. An uplifting philanthropy *par excellence,* making riches to the people, in value, beyond the purchasing power of gold, would be the work of a Committee on Educating the Public in Matters of Health.

Free lectures should be given at points so varied in location as to be easily accessible to residents of all parts of the city. The titles and details should be such as would attract as supporters the leaders in our business, professional and social affairs, and reach as auditors just those sought for. No trouble would be experienced to secure, from the request for volunteers from our members, abundant numbers of competent physicians to deliver such lectures. It would give the younger members a chance to improve themselves in public speaking, the public a most valuable and important educational uplift and would bring all to better know our society and its proper place in public affairs. Better efficiency in all walks of life would result from such proper instruction.

Existing Committees of the Society. The old and new committees are all now well known to you. Of the new, the propriety of the existence of each one is proven, by the excellent work some of them have done and recognizing, by deduction, what each committee can do.

Once a committee recognizes that it has been created for serious and responsible work, with assurance of rich harvest of good to result, the rest is very easy. Experience teaches that every member of every committee must demonstrate that he does recognize these facts or he should make way for another. Given, conviction of the propriety of the work in hand, and the desire then to do it, the realization is assured; as has been proven by the work of some of the committees, the men composing which are notedly the most intensely and constantly occupied and the hardest workers in professional and other fields, in our profession.

These committees have done more for the advancement of our society than any other move in many years, and they can be developed to produce greater results which will render our county society famous everywhere.

An assembling of all members of all committees at least quarterly for mutual conference under the guidance of the president, should be a fixed rule that all should respect. The president, always an *ex-officio* member, should meet the committees wherever possible.

Still another committee which I feel would assuredly justify its existence, is a Committee on Medical Economics. The purpose of the county society should reach into other fields than the exclusive advancement of scientific medicine. The members must gain a livelihood but so many have had no training in general business procedures and economics that this lack of what is almost an essential to success has left these in continuous financial distress. This should not be, and it can be prevented in great measure. It is not a compliment to the society that such fact does exist, for the members of the society are medically capable, but in the money getting, or business side, of the profession, they are sadly lacking.

A capable and resourceful committee of earnest workers can be formed from our members which will prove of great aid and can give or bring about the giving of most valuable instruction. It could arrange one or more meetings a year, of the parent society presenting, as the essayists or instructors, men from our own and sister profession or commercial life, and be sure of such meetings being most popular, educational and well attended. This committee could also arrange for a meeting on Economics and Business Methods for each of our branches, once a year. The service it could render would be prized indeed by a much larger portion of our society than many might think possible.

I have in mind other committees that could develop and teach a lot of valuable truths to our profession, our city legislators and workers in philanthropic fields and I hope, after the present committees have all made good, to see the creation of such additions by the efforts of the next or some early successor as president.

Again would I say that this, the county medical society, is the one big broad representative medical body of Philadelphia, including in its membership all members in most of the other medical societies, and not less than nine tenths of those in any society in our city, and so we can have no superior in medical standard or in ability to do better work.

Conference and Exhibition in Modern Medicine and Allied Affairs. As the committees of the society grow enthusiastic and energetic in their fields of work it seems to me it would be well to consider having a modern medical exhibition for physicians, to be followed by one for the nonmedical public. Such an exhibition could be financed and its creation would be quite feasible. It could be given at a time coincident with and following the meeting of the state medical society here in September. Having been closely associated with the creation and promotion of large and successful exhibitions here, during recent years with the object of teaching the public, truths and recognized untruths, about tuberculosis, milk, and baby saving, I place my beliefs on experience as to the assured success of such an enterprise. When the idea of the Baby Saving Show originated I did not think that over half a million people would visit it, but such is true. The lessons taught must be far reaching in benefit. In such an exhibition as I now propose, all scientific and philanthropic work allied to health and disease should be associated in the undertaking. Such a great awakening and powerful impression in health education as would place Philadelphia far in advance of all other cities in the knowledge our citizens would have of the various subjects taught, would be assured. I think it is fully conceded that in the previous exhibitions related to health, Philadelphia has far excelled all other like efforts in other cities. We can afford to be called slow so long as we blaze the way and keep the lead. As regular medicine teaches the public, so will the public have faith in and respect it, and will be purged of the fraud, fake, charlatan and unfit.

Now is the time for our county society to do things—big things, and do them well. Let there be no subsidence of interest and activity. Progress in all other scientific walks demands that to keep medicine apace. Old ways must give way to new ones. New moves and new activities must be originated as the percentage of competent and willing workers increases.

The attendance on three occasions at our scientific meetings during the year was more than that for all the meetings for the entire year of any other medical society in Philadelphia, except for the Philadelphia Pediatric Society which for the year had somewhat more in attendance than these meetings had. On these occasions every seat in all three of the halls in the College of Physicians' building could have been occupied and still some would have had to stand. Arrangements have been made for further meetings which will assemble even greater numbers.

Our Growth. The number of new members elected to the county society during the year 1914 was 368, a superb advance over any previous year. A large portion were proposed in 1913 and of course some proposed late in 1914, go over for the election to 1915. During the past three years, 712 new members were elected, though some failed to qualify.

It has come to be somewhat embarrassing to explain why one is not a member of the county society.

A Memorable Visit. Very shortly before his universally lamented death, one of our members, the late S. Weir Mitchell, called at a meeting of the Board of Directors of our society on a visit of felicitation and solicitous inquiry as to whether we were having everything done the College of Physicians could do in our aid. He assured us he personally wanted to and would do everything in his power always to secure for us everything the existence of the college building could be of use to us for in our work of furthering the interests of our society. The delight and value in having the expression of such interest and offer of aid from the highest stationed man in American medicine can not be overestimated.

Other Medical and Allied Societies. We have in our city a number of distinct medical and allied societies such as a medical club of great numerical strength and honorable history in good work done, the Academy of Natural Science, the Franklin Institute, the College of Pharmacy, the Dental Societies, the Philosophical Society, the Child Federation, the Housing Commission, the Pennsylvania Society for Prevention of Tuberculosis, and others, all showing vigor and successful enthusiasm in work and purpose. Many of the members of these societies are also members of the Philadelphia County Medical Society. Their respective fields of work are, and can be, only division, classification, and accentuation of what is covered by the county society, as it is as broad as medicine itself.

A maintenance of respective individualities and some official affiliation with the county society by them should weaken none and strengthen all and is advised. The strength of a union in some form of detail, yet to be worked out, should be considered. Individual organization could be kept intact, reduction in cost of maintenance brought about, increased membership and attendance at all meetings assured, more powerful influence in the medical and nonmedical world established, and greater impress of the respective branches of medicine and its allies on all the other branches or natural divisions of medicine, be made a certain result.

A sort of reciprocity in government could be considered, the county society possibly sending a member to the controlling body of each society, and they each sending one to the county body, on occasions when concerted activities were being considered as advisable.

At least once a year a union meeting of each one of the societies of close medical affiliation in sequence, with the county society, could be wisely held and a meeting of unusual importance in subject and presentation, to the general profession, could be thus assured. All could attend these meetings as a matter of right, and not on the basis of accepting the courtesy of being an invited guest, which always involves some sense of indebtedness to the host, and by many therefore not accepted. It had been my hope to test out union meetings of the county society with some of the other medical societies, and some effort was made to such end, but the time was too short for realization of the test to therefrom learn of its pros and cons.

Afternoon Lectures. It seemed well to me to have started a course of lectures on matters of and allied to medicine by men of high places in their respective fields, these lectures to be open to all interested physicians as well as to our county society. It was the purpose to hold them in the afternoon for three reasons, first, that the Hall Committee of the College of Physicians very generously granted the gratuitous use of Thompson Hall on the afternoon of the days on which our scientific meetings are held in the evenings; next, that observation has shown that a great many people can arrange conveniently to be free to attend a lecture at about four thirty in the afternoon; and, finally, that some would probably come from a distance to the afternoon lecture and would remain for the evening meeting.

These lectures could be made very attractive, instructive and entertaining and free of cost to the society, and could embrace such subjects as medical jurisprudence, medical economics, surgery in war, relationship of medicine to the development of man, in mind, body and achievements, developments in the various branches of medicine during the past decade, and the most modern methods of teaching them, this to include the fundamentals of anatomy, physiology, obstetrics, pathology, chemistry, materia medica, etc.

Probably no better or easier method could be offered to enable the average general physician to get abreast of the times, medically, than a close application to study of what such a course of letters would offer. If the material offered is of sufficiently high quality and attractive, the success and popularity of the experiment should be assured.

The Secretary. Nice and true things have been said by former presidents about Dr. William S. Wray, our secretary for twelve years past. They were well deserved and like old wine he has constantly improved, so that his work has much indebted the society to him. His work has greatly increased and deserves recognition. His compensation is insufficient for the work he does.

The county medical society should have the secretary made executive secretary, and also should have a stenographer and typist versed in medical work, and a central office in the city where as much as possible of the business pertaining to the society could be transacted. The executive secretary should have much more power in the business affairs of the society than at present, and should assist the officers and committees of the society in their work so as to relieve them of all possible detail.

The stenographer should serve the officers and committees as well as the executive secretary in such work as each respectively requires in the society's interest. With such aid the volume and quality of work would probably be doubled, and those who should be, could be relieved of detail work. The stenographer should be competent wisely to take down and abstract papers and discussions presented at our scientific meetings in form for publication in the *Roster*, if so desired.

The society is now and will continue to be quite large enough in its business detail to require such office, officer and employee, if its interests are to be properly looked after.

The Treasurer. The treasurer, Dr. Edward A. S. Shumway, can not be too highly complimented on the manner in which he has filled his office. He has modernized the methods of bookkeeping, etc., and it is but true to say, in ability, kindly bearing, geniality, and accuracy in his work, no one more fitting as a criterion for a treasurer could be found. His work has tremendously increased and he should be supplied with pay for a clerical assistant if he is expected to continue in office. His personal compensation is very inadequate.

The Board of Directors extends an invitation to these two officers to sit with them at their meetings, and advise, when asked, on matters pertaining to their offices. This they have kindly done, and to material advantage.

The suggestion that the secretary and treasurer being *ipso facto* members of the Board of Directors with full powers has been made. This in my judgment would be quite ill advised. It would mean the dual holding of two important positions in the society which is not best. We may not always be so fortunate as to have the present occupants in the respective offices and, with others filling them, we might and likely would find that a person, filling the one office well, would not make a good director.

The present arrangement is probably the best because every director has a lot of detail work to do and is likely to be chairman of some committee. If these duties were added to those of either the secretary or treasurer, he would not have much time for the practice of his profession.

The Assistant Secretary. This officer who is thereby clerk to the Board of Directors was Dr. Arthur H. Hopkins until a few months ago, the pressure of professional duties at the hour of the Board's meetings necessitated his resigning. This was sorely regretted by all who had official relationship with him. To follow Dr. Howard Childs Carpenter was trying, but Dr. Hopkins proved competent, unfailing and courteous to a degree.

In sequence, Dr. W. Penn Vail was elected to the position for the unexpired term and has proved entirely fit and satisfactory in every way.

The compensation paid the assistant secretary is entirely out of proportion, in its smallness, to the duties he performs.

The Vice President. Dr. Hobart A. Hare is the present incumbent. High class men in the profession, such as Dr. Hare is, it is the rule to elect to this office. The office should have other duties than those usual to it. To have such men inactive is like good material gone to waste. He should at least sit with the Board of Directors at their meetings in an advisory capacity such as has been the custom the past year with the secretary and treasurer. He thus would become familiar with the details of the society's resources, workings, etc., and so better fitted to serve the society if called on to preside. He should preside at a meeting of each of the branches sometime during the year and so stimulate the branches to greater activities.

Branches. Some of our branches have developed and improved in every way, others could have done better. The correct estimate of the field to be covered by the branches has apparently not been properly understood by some of their officers. Early in the year I tried to get the officers of all the branches to meet, for conference, with the chairman of the Committee on Branches of the Board of Directors and myself, but not many honored the invitation.

A meeting of the officers of all the branches and the Committee on Branches of the Board of Directors and the president should be held soon after the new officers are elected and full instruction and conference had. The parent body should have some censorship control of the programs of the branches, as experience has shown that papers, declined by the Committee on Scientific Program of the society for very proper reasons, have afterward secured presentation before branches, to be later exploited in the nonmedical dailies, as having been read before the county society, thus causing unfavorable reflection on the society.

It might be well that once each year each branch, in sequence, omit one of their regular local meetings and meet in as large number as possible with the county medical society scientific meeting, at which it could be arranged that the branch have some special participation. The advantage of such arrangement would be reciprocal. Also each local vice president of the parent society might well, once a year, preside at one of the meetings of the branch which elected him.

Major Meetings. By this I refer to such meetings as we have had sometimes during the past year when the county societies from neighboring counties were invited to be our guests, including a reception and supper following the scientific meetings. These were the most successful meetings of any local societies ever held in Philadelphia. On one occasion, when the Dauphin County Society was with us, we had Dr. John B. McAlister of Dauphin County, president elect of the Medical Society of the State of Pennsylvania, as one of the visitors. The attendance at this meeting was much over five hundred.

On another occasion, about fifty members of Montgomery County Society made us a daytime visit. They were entertained by special clinics and a lunch at the University Club.

The next occasion was when visiting gynecologists from distant states were with us. The large assembly hall of the new Manufacturers Club Building, with seating capacity for nearly twelve hundred was secured for the occasion. In defiance of inclement weather nearly every seat on the first floor and in the gallery was occupied by our members and invited guests from New Jersey and Delaware. During the meeting Dr. Gray, president of the New Jersey State Society, delighted the audience with a short address. Following the scientific meeting, several hundred participated in a supper served in the Grill Room of the Club House. Our society and our city, medical speaking, owe much to about twenty of our leading gynecologists, who bore the expense of entertaining the out-of-town guests at supper on this occasion. The very unusual program of this meeting was due to the work of Dr. Barton Cooke Hirst.

A meeting that gave assurance of numbers far above the seating capacity of Thompson Hall was held at the Academy of Natural Sciences. Through the courtesy of the president of the academy, Dr. Samuel G. Dixon, the capacious hall was tendered gratuitously for the meeting. Its seating capacity of about four hundred and fifty proved very much too small to accommodate those who came and, after all available standing room was taken, about one hundred and fifty late comers were turned away. The program was arranged by Dr. T. H. Weisenburg on the subject of "Demonstration of the Cinematograph in Medical Teaching and Investigation."

The Dr. John B. Deaver Night. It was thought wise to arrange on occasion a meeting, specially in honor of some member of our society who has gained great prominence in our profession, by reason of his marked attainments in aid of medicine. The first name selected was that of Dr. John B. Deaver. The meeting was the third largest the county society has record of ever having held. About two hundred people could not be seated or find standing room in Thompson Hall, although all available space was filled with extra chairs.

It is well to explain why we do not have Mitchell Hall, as the question is often asked, that Mitchell Hall, which when filled with extra chairs seats more than Thompson Hall, is reserved by the Hall Committee of the College of Physicians exclusively for meetings of the college. We therefore have to seek other quarters than Thompson Hall when we expect and desire to accommodate more than two hundred and fifty. But few suitable halls are to be found in Philadelphia.

The outcome of meetings of this sort is most beneficial. Acquaintanceship, fraternal good fellowship of the manly sort, mutual helpfulness, union, are the sort of things that result.

In the medical profession of a large city, a certain percentage are specialists, whose work comes to them from the rest of the profession.

Division of fees is wrong, and debasing, as it places both parties to it in a doubtful and questionable light among their fellows and among the nonmedical public.

The late and lamented man of high place in our profession, Dr. Charles Lester Leonard, suggested that an organization of such men together with any others, of our society, who might desire to affiliate, be formed to act as host at one or two social affairs each year, to follow selected scientific meetings. This would seem proper, commendable, above criticism and of assurance of good and good only, to the profession, to our society and to the hosts. It has been wisely suggested that such a body acting as host should bear the name of Dr. Leonard who originated the idea and who would have carried it into successful realization but for his untimely death, that of a martyr to the advancement of scientific medicine.

All such affairs tend to strengthen the bond of union of each to each, and each to all, and so make a one of all, when occasion of public good might demand unison of response to call.

Visiting of Nonresident Medical and Allied Societies. The reciprocal gain from encouraging such visits has been uncontrovertibly proven by the three experiences during the past year when we had such visitors. I strongly favor the social functions such as followed these meetings.

The theory that our members ought to come out to meetings without social functions to follow, is sound, but experience is the best teacher, and it has demonstrated that the after meeting and refreshments at least double the attendance at the scientific meetings. It is my conviction that if light refreshments could be served at low cost to the members, paying individually, the result would prove excellent in improving the broad elements for which the society stands.

From antiquity comes the heritage of the fact that the taking of food together, binds and strengthens in common purpose, in honor, and in good fraternal fellowship, disseminates that which is best and so increases individual and collective achievements.

Such after-meeting functions ought not to be almost an essential to the largest results, in furthering the diversified work of the society, but that they are so is a condition and not a theory, proven by every experimental test.

The Roster. The *Roster* in the past has been one of the heaviest expenses the society has had to meet and this expense was constantly increasing. As it was, in appearance and general make up, it was unbecoming our great society and also was of doubtful efficiency. Those officially interested were considering recommending its abandonment as with the increasing fixed charges of the society, it was felt that the society could not afford to carry the expense its publication involved. It was decided to recommend a radical change in its make up, and admit sufficient advertisements to carry its cost. Our solicitors advised us that our charter would so permit us to do.

About three months ago the Committee of Publication, after various conferences, decided on and made the change to its present form, introducing medical news items, and abstracts of papers read before the county society or elsewhere, and special papers prepared by the standing committees of the society. The advertisements are carefully censored by the Publication Committee. It is now generally admitted to be superior to any like publication in the country.

The agency in whose hands the securing of advertisements was experimentally placed, has not been as successful as it should have been. The committee has taken this in hand and expects very soon to have the *Roster* still further improved in form and fully self-sustaining. The association of such societies and associations as above referred to, under other medical and allied societies in this address, in the publication of the *Roster*, should be feasible and mutually advantageous.

Out of its new form has come the thought of developing the *Roster*, by combination or otherwise, into a Philadelphia medical weekly with many points of difference and superiority over others and without cost to our members. Conferences tending to such an early possible result are being held with the publishers of certain medical journals.

No other community nearly so large as ours fails to possess a successful medical weekly for which the usual subscription price for a like publication is paid, while by any arrangement that may be offered to the society for its consideration, the members of our society would be free recipients of the proposed weekly.

Those who have large experience in medical journalism feel that the success of such an enterprise would be assured.

Every precaution would be taken to keep everything printed in the journal ethically clean, and unobjectionable even to the hypercritical.

Next Session of the Medical Society of the State of Pennsylvania. At the last session, which was held in Pittsburgh in September, 1914, Scranton, Wilkes-Barre and Harrisburg were considered as the city at which the next meeting should be held, and Harrisburg was decided upon. A little later the delegates from Dauphin County decided that Harrisburg did not have sufficient hotel and other temporary housing accommodation, and expressed desire that Philadelphia should extend an invitation to change the location, to our city. Such invitation was then extended and enthusiastically accepted.

The president of the state society later requested that I nominate a chairman of Committee on Arrangements as required by the by-laws. For this office I named Dr. J. Torrance Rugh. With Dr. Rugh holding this office and Dr. Henry D. Jump of our society as chairman of Committee on Scientific Program, an unusually successful meeting is assured.

Health Lessons in the Public Ledger. What the general public feels it has a moral right to possess, it will get as nearly as possible, by some means. Now that the public has a fair amount of knowledge in all the branches of progress of the times, including the sciences, it will not be denied some knowledge of medicine in the broad meaning of that word.

Such knowledge as it can safely comprehend and use to advantage it should have. Health talks in the nonmedical press have been appearing in greatly increasing numbers, but they were open to unfavorable criticism. There generally have been three or four reasons for their preparation, all of these open to serious objections. Many have been written by men who have failed in our profession and have had little practical experience. With this class of writers the purpose is twofold, first to make money from the writing of the papers, and second to have their names appear in the public print, thus securing a personal advertisement. A third type of writer has been one who desired to gain prominence by presuming to challenge opinions known to be held by some of the rightful leaders of our profession. All right-thinking physicians discourage and even deplore the appearance of the names of physicians in the public press.

To obviate these serious objections, the idea was conceived of having the various committees of the society prepare, or have prepared, lessons on health subjects, for the nonmedical public, to have these lessons censored by the respective members of the committee which had prepared them, then sent to the Committee on Health Lessons, for its further censoring, and then to the daily press for publication under the name of the respective committee of the society, no individual's name appearing on any account.

An arrangement was made with the *Public Ledger* for their weekly publication, for one year, beginning on April 9. Seventeen were published when in August a letter from the *Ledger* was received, noting their temporary discontinuance of the publications, on account of the space being required for war news. Many of these lessons were of unusual excellence and received almost universally the highest commendation.

Special editorials in medical journals of the highest standing appeared at times speaking in high praise of the lessons and the conditions and restrictions under which they were published.

A recent letter from the *Ledger* indicates the resumption of the publications at an early date. The *Public Ledger* was selected as the medium for bringing these lessons before the public because of its freedom from objectional medical advertisements. Many people, physicians included, have commended the publication of these health lessons as one of the best moves the county society has ever made.

The New Charter. My immediate predecessor in his annual address presented the facts bearing on the proposed new charter.

After a very long delay our solicitor, Mr. Carson, was able recently to report that the court ruled that we did not need an amended charter for the powers we sought, but that such powers would be ours by enacting additional by-laws.

One very important by-law has, by regular process, been enacted to-night by the society, by which the society can now purge itself of members who have violated ethical or moral standards.

The Committees of the Board of Directors. The Committee on Scientific Program consisting of Dr. John D. McLean, chairman, Dr. J. Torrance Rugh and Dr. Edward Martin has entitled itself to the fullest praise; this is proved by the results it has accomplished. It has given us high class, inspiring, educational programs attracting large audiences. The best of the offerings in the programs in state and national societies, could not excel those of the county medical in the past year.

To have accomplished this has involved an amount of original thought in the creation of the programs, and the securing their presentation by the right people, as well as the handling of such a mass of detail, in correspondence, conferences, and innumerable other items, demanding time and thought, such as none but those who have been through such service, can believe credible. For the chairman it has meant an average of more than two hours actual work every day. If the plan is continued which has been so successful during the past few months, of having one of the committees of the society, assisted by the advice of the Program Committee, create in detail one of the scientific programs each month, the work will be lighter for the Program Committee, the high standard maintained and ideal symposiums presented.

Personally I can use no words too laudatory, appreciative and complimentary of Dr. McLean and his associates in the committee for their work the past year and the support they have given me.

Committee on Finance. This committee consisting of Dr. Herman B. Allyn, chairman, Dr. John J. Robrecht and Dr. William S. Newcomet has performed its every duty in a manner worthy of the commendation due professional financiers. The society owes this committee much, for by its ability and watchfulness our financial condition, especially when the state and other fixed charges are considered, causes agreeable surprise.

Committee on Medical Defense. Dr. G. Morton Illman, chairman, and Dr. J. Torrance Rugh, and Dr. Herman Allyn composed this committee. As is common in all committees, the great mass of work falls on the chairman. Dr. Illman's untiring work in the past year has established such a record for his strong defense of cases that have passed favorable censorship and secured recommendation for defense by the Board of Directors, that the unsavory lawyer, who usually prosecutes such cases, has found his time and effort wasted, and so the prosecutions have been reduced to a minimum. It has cost Dr. Illman much in time taken from his professional duties, and in hard original work to have established this excellent condition, and to a degree every member of the society is his debtor.

Medical defense is a business in itself which he has thoroughly mastered. This is a comforting and valuable asset of the society when a member finds himself unexpectedly the victim of a wrong or a blackmailing prosecution.

Committee on Publication. The *Roster* rests under the paternal wing of this committee. Until a few months ago, soon after the change in the *Roster*, Dr. Henry Leffman was chairman of this committee. He then resigned from the Board of Directors and so from this committee.

Dr. John F. Roderer was made chairman and a wise selection it was. He is competent, and an untiring and enthusiastic worker determined to succeed. Possessed of judgment ripe and good, experienced in business affairs and institutional work, he has made good indeed. It has been a difficult and at times a trying work but the quality of the *Roster* tells what he and his committee have done.

Committee on Branches. Dr. Roderer was formerly chairman and only member of the committee and did much good work. Dr. Frank C. Hammond came into the Board of Directors, and was supplied by Dr. Roderer with much valuable data. Dr. Hammond at once got busy, very busy, and has already compiled the results of an excellent survey of each branch from the study of which he has been able to make most helpful suggestions. The success of the branches of the society is largely dependent on the work of this committee and the use the branches make of the aid, which its wise and enthusiastic suggestions offer.

Committee on Health Lessons. This committee had as its duty the securing the writing of the health lessons for publication in the *Public Ledger* weekly, and the censoring them with the power of correcting and modifying them if, in their judgment, such was best. It consisted of Dr. Allyn, Dr. Newcomet and the president. Until the breaking out of the war caused such a volume of war news as to crowd out the publication of the weekly lessons, as the *Ledger* had agreed to do, this committee found work to occupy the expenditure of much time and energy.

The Board of Censors. This board in personnel remained the same as during the previous year, Drs. Jay F. Schamberg, secretary, Judson Daland, Lewis H. Adler, Jr., William E. Hughes and William M. Welch, chairman.

The just performance of the duty devolving on this board is a disagreeable task and requires judgment, experience and firmness in weighing the cause of the individual and the society. Its observations have been made from all the evidence obtainable, and its decisions never can be questioned as being given from any but a perfectly neutral standpoint. The society is fortunate indeed in having this Board as it is, and has been.

The Editor. Dr. A. B. Hirsh, competent, courteous, hard working, always aspiring to better things, better, broader progressive development for the *Roster,* is too well known to you all by his works and of himself to make my complimentary word add materially to the enviable place he holds in your regard. If such word can add, it is his. The numerous years during which he has been editor have made him master of every detail of what is quite a distinct business.

Aid Association. This association satisfies one of the most worthy charitable needs among physicians and those dependent upon them. It is most closely affiliated with our county society and it merits the support of every member. I should like to see it adopted as a child of the society by an arrangement for future support which would fully protect its present resources.

Our New Home. Had not a member of the advisory committee of the society, who was also a member of the city's comprehensive plans committee, learned that Sixteenth Street near Chestnut was to be widened by taking probably twenty feet or more off the west side, the question of a new home would not likely be left as a heritage to my successor. But for this, in all likelihood we would now be holding our meetings in our own building. What was looked on as a misfortune will, however, doubtless prove a blessing. Hopes and plans for bigger things have developed and, in the hands of the chairman of the Advisory Committee, now our incoming president, a man of energy and resource, and one who will not be denied, a most modern, comprehensive and complete edifice will be our realization.

It will be wisely located and the biggest boost to Philadelphia medicine, and probably allied interests, that has ever occurred.

A more than welcome home for all the profession, with broadest scientific and educational resources and possibilities; one where physicians may meet, mix and assimilate mentally, and so develop in such progress and strength as is only possible from such relationship.

A home for future medical generations, a place where exists such balance of dignity and democracy that every physician will feel honored in securing for it and making to it, if possible, gifts and bequests toward supporting directly and by endowment, laboratories, libraries, periodical literature, and all that the future may develop as best aids to the medical progress of every physician.

A most homelike home and a place of science, with unrestricted welcome to all.

Such a home is so much needed, and so much good can come of it that it has become so near a necessity that its failure of realization should not be considered. A team work, an united push and all is done. We possess every essential, and only to get the forces in action remains.

In presenting to you this valedictory, I regret its length but I have felt that you would continue that generous kindly consideration that has been my support and encouragement throughout the year, and so I have risked including these many things I desired to say.

As being made your president places one in a position by which he may beneficially serve every member of one of the largest and most active medical societies of county limitations, in our states, the honor is in harmony with the opportunity. If in the annual balance sheet, now taken, the showing is to the credit side I am more than content, and repaid, for much effort and time spent in hard and anxious work.

I hope that such detail of organization and system has been established, as leaves the society a fairly well-constructed, lubricated and easy going machine, such as will make the work of my successor much less and easier, and so give him freedom to make increasing progress and betterment. I can see a wonderful future for our society. With no exception worthy of reference, your assisting work and encouraging words have sustained me; without them what has been done could not have been done.

If the society is left better than it was received, it is an honor in which the Board of Directors, Board of Censors and committees of the society have earned the great part, and I can not too highly express my gratitude to them all.

It has been an inspiring and delightful work, for the privilege of doing which I express my great debt to you, and I now more than ever fully recognize that nothing can be too good for the county medical society as I say adieu.

ORIGINAL ARTICLES.

OBSERVATIONS ON EPILEPSY CHIEFLY FROM AN X-RAY STANDPOINT.

BY T. M. T. MC KENNAN, M.D.,
GEORGE C. JOHNSTON, M.D.,
AND C. H. HENNINGER, M.D.,
Pittsburgh.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

These observations have extended over a period of two and one half years. Two and one half years ago one of us (George C. Johnston) noticed an abnormal appearance in the base of the skull of epileptics shown on the *x*-ray negatives of these cases. He called the attention of the two other writers of this paper to the matter. Since that time we have studied the cases together.

In September, 1913, Dr. Johnston read a paper before the American Roentgen Society entitled "Radiography of the Pituitary in Its Relation to Epilepsy." Bone changes in the base of the skull, more especially in the region of the sella turcica were noted.

> "These changes consisted for the most part in an overgrowth of the anterior and especially of the posterior clinoid processes which, in addition to the increase in area and length, are folded over and down upon the pituitary gland, frequently enclosing it within a bony basket. The fossa is largely or completely roofed over in some cases in addition to this overgrowth of the clinoidal processes. A large proportion of the cases show a distinctive increased density in the bony tissues forming the roof of the orbits, the sphenoidal sinus and the sphenoidal cells. In quite a number of cases the sphenoidal cells are decidedly blocked with newly formed bony tissues."

Dr. Johnston regarded the above named paper as a preliminary report on this subject. We presented a paper on this subject to the American Neurological Association in May, 1914, in which we described the findings in ninety-five cases. At the present time our observations comprise one hundred and fifteen cases.

Seven of these cases were found to be pituitary tumors, and in only one of these was there any other evidence of involvement of the pituitary gland aside from the epileptic attacks. In these tumor cases there was no local bony thickening at the base of the skull, in fact local thinning of the body of the sphenoid or the clinoid processes from pressure was found almost constantly.

In twenty-one cases there was local thickening of bony tissue that was confined to enlargement alone of the clinoid processes, or to thickening in the anterior fossa of the base of the skull.

In thirty-one cases the local bony changes were in two situations; namely, the clinoid processes and the base of the anterior fossa.

In thirty-six cases there were bony changes in three situations; namely, the clinoid processes, the anterior fossa and the body of the sphenoid bone. In these cases there is an appearance of thickening along the entire base of the skull.

In twenty cases no bony alterations were found.

An analysis of these latter cases shows that ten of them gave clinical evidence of being cerebropathies; three of them gave clinical evidence of being paresis. One case showed a calcareous degeneration in the center of the pituitary region. Three showed on the *x*-ray plate that they were cases of internal hydrocephalus. In one case the picture was taken one week after the first attack; in another case, six months after the first attack. The three remaining cases had been epileptic from three to five years with infrequent attacks. We did not find any evidence of bursting fractures of the base of the skull in any of the cases. One case that showed physical evidence of being a cerebropathy had the history of cerebral concussion.

	Total Number of Cases.	Percentage.
Tumors	7	6.08
No features	20	17.39
One feature	21	18.27
Two features	31	26.96
Three features	36	31.30
Total	115	100.00

In all cases the average age was twenty-three years.

In the first class of cases, namely where the clinoids alone were involved, or the base of the anterior fossa alone was involved, the average length of time of the existence of the epilepsy was five and a half years. In these cases, fourteen per cent. showed frequent attacks. (If attacks occurred as often as once in two weeks we called them frequent; if attacks averaged only one per month we called them infrequent.)

In the second class of cases, namely with changes in the clinoid process and the base of the anterior fossa, the average length of time of existence of the epilepsy was seven and a third years. In twenty-five per cent. of these cases the patients had frequent attacks.

In the third class, namely with changes in three places, the average length of time of existence of the epilepsy was four and two thirds years. Sixty-six and two thirds per cent. of the patients in these cases had frequent attacks.

It would seem evident, therefore, that frequency of attacks has more to do with producing local bony changes than the length of time of existence of the epilepsy. Age does not appear to signify as far as bony changes are concerned. For instance, one patient, five years of age, exhibited all the features, whereas another patient, fifty-six years of age, showed but one feature.

X-ray plates in cases where there is no history of epilepsy compared with the plates of epileptics show a marked difference. In the examination of an equal number of plates where there was no history of epilepsy, we found four with marked clinoids, two with a thick anterior fossa, two with two features, and one with three features, about ten per cent. of alteration, whereas leaving out the cases of tumor we found the percentage of bony changes in the epileptics to be eighty.

Going over all the plates of lateral views of the skull that we could find in Dr. Johnston's large collection, we found only two plates that showed the three features markedly in cases where there was no history of epilepsy. One of these was a case of bitemporal hemianopsia, with a positive Wassermann in which symptoms disappeared under treatment.

Examination of the plates in cases of general acromegalia reveals the fact that there is no local change of any degree in the situations that we find involved in the epileptic.

It would seem probable, from our observations, that the bony changes in epileptics are found only in the so-called essential or idiopathic epilepsy. In none of the symptomatic cases of epilepsy were there any bony changes found. Symptomatic cases examined by us were cases of paresis, primary and secondary cerebropathies and internal hydrocephalus.

The interpretation of the changes found at the base of the skull in the essential epilepsies at first seemed to us to be very difficult. Our first idea was that it had an inflammatory origin. This we were forced to abandon for the reason that we could find no cause of an infective character that would produce inflammation, for the relative regularity of the changes in certain situations in the cases examined. The viewpoint that the bony overgrowth is a local acromegaly and that the bony deposit is brought about through venous congestion at the base of the skull, seems to us to be the only logical explanation.

To comprehend this a knowledge of the venous circulation at the base of the skull is essential. The veins from the anterior lobe of the pituitary gland empty into the intercavernous sinuses and the secretion from the anterior lobe of the pituitary is poured into these sinuses. The intercavernous sinuses vary in number from one to three; there is probably an average of two. Knott found a single intercavernous sinus in twelve out of forty-four examined; in fifteen out of forty-four, he found two. Most textbooks of anatomy give these two intercavernous sinuses the name of the circular sinus. It should, however, be noted that the intercavernous sinuses are really veins and not sinuses. Hence they are collapsible.

These intercavernous veins serve to join the two cavernous sinuses and they receive also a number of small veins from the adjacent parietal dura mater. This dura, as we know, is the internal periosteum. These dural veins drain an area of the base of the skull comprising the clinoid processes and the dorsum sellæ, the anterior fossa and the body of the sphenoid. The anastomosis of these veins with other veins probably varies considerably. The bony deposit in epileptics corresponds to the areas drained by these dural veins of the base and leads directly to the conviction that the process of bony change can only be brought about by some pressure within the small, confined, boxlike space that contains the pituitary gland as well as the intercavernous veins.

Pressure within this boxlike space that would prevent the intercavernous veins from discharging their contents into the cavernous sinuses, would cause the blood in this boxlike structure to be backed into the dural veins. The circulation at this point would be reversed and the blood loaded with secretion from the anterior lobe of the pituitary gland would bathe the bony structure of the base of the skull in the region of the clinoid processes, dorsum sellæ, the anterior fossa and the body of the sphenoid bone. Increased bony deposit would consequently be the result. This deposit, however, would vary in amount, depending upon two factors: First, the duration of pressure that causes the reversal of circulation; and second, upon the freedom of anastomosis of the dural veins.

The next question that logically arises is: What can cause the pressure within this boxlike structure? Hypertrophy of the pituitary gland is improbable, for this condition has not been found in postmortem examinations of epileptics. It seems more probable to us that it is intermittent hyperemia and this viewpoint is somewhat confirmed by the fact that postmortem examinations of epileptics reveal abnormally large veins within the pituitary gland.

The question then naturally arises: What is the cause, or what can be the cause of intermittent hyperemia in this situation? Does it occur from the attack of epilepsy with the attendant general venous congestion? We think this extremely improbable, for our cases of symptomatic epilepsy showed no bony deposit. Again, hyperemia, the result of an attack of epilepsy, would naturally last for a few minutes only and the blood stream would soon return to its normal course. Hyperemia would have to exist for hours or days to permit of any bony deposit.

It seems more probable that the venous hyperemia would be due to some vasomotor disturbance of the anterior lobe of the pituitary gland. This same venous hyperemia would doubtless tend to prevent a proper amount of secretion of the posterior lobe from gaining access to the third ventricle by way of the infundibulum and in all probability repeated hyperemias would cause a degree of crippling of the entire pituitary gland, the posterior lobe, as well as the anterior lobe.

If hypopituitarism of the posterior lobe is the important factor in carbohydrate tolerance, and if carbohydrate tolerance is increased in epilepsy, this fact would be evidence of crippling of the posterior lobe. In all the cases examined, fourteen in number, we found a high degree of carbohydrate tolerance.

Brain changes in epileptics, when found, are looked upon by pathologists as being largely of a secondary character. That the crippled posterior lobe may be a factor in these changes seems probable if we accept the view, expressed by Andriezen and others, that the secretion of the posterior lobe serves to neutralize and render inert the noxious material produced by nerve cell action. In paresis, the cerebropathies, internal hydrocephalus and other states, such as arteriosclerosis, the cortical irritability that may result in an epileptic attack, may be due to the impossibility of the secretion from the posterior lobe gaining an access to the cortex. The source of the secretion in these cases may not be in any way inefficient.

As to the effect of pituitary feeding in the cases of epilepsy, we are unwilling to state any positive convictions, too many factors entering into the question of results in the treatment of epilepsy to make positive the result of any one line of treatment in a relatively limited number of cases.

Thirty-five of our patients have taken pituitary extract for a period of time, varying from eighteen months down to two or three months. In some instances we noted a reduction in the number of attacks of individuals who had previously taken bromids without effect.

We are rather inclined to the viewpoint that in the essential epilepsies pituitary feeding will be found to have very little good effect. We think it more likely that pituitary feeding may have more effect in some of the symptomatic epilepsies than in the essential epilepsies. It is our opinion that, while it is probable that a moderate degree of hypopituitarism exists in essential epileptics at all times, nevertheless the epileptic attack in these cases is probably precipitated by sudden cessation of practically all secretion from the posterior lobe due to sudden pressure upon the posterior lobe from hyperemia of the anterior lobe. The variability in the course of essential epilepsy would seem to be dependent very largely upon that vasomotor factor in the production of hyperemia of the anterior lobe, and the cause of this vasomotor disturbance seems to us to be impossible to ascertain.

To sum up we find a condition of local acromegaly in essential epilepsy. This can only be due to venous stasis. This stasis can only come in one way; namely from pressure within the boxlike structure that contains the pituitary gland. The evidence appears to be in favor of a crippling of this gland by pressure. Hypopituitarism would consequently be the result. It is known that epilepsy accompanies this condition. Therefore, it would appear that so-called idiopathic or essential epilepsy is due to a mechanical injury of the pituitary gland.

DISCUSSION.

Dr. C. H. Henninger, Pittsburgh: I wish to call particular attention to the first two groups of cases reported. In the examination of one hundred and fifteen patients in the first group the finding of seven tumors emphasizes the necessity for a more thorough examination of this unfortunate class of patients. The diagnosis of six of these cases from the clinical findings alone would have been impossible, as only one patient exhibited symptoms of intracranial tumor other than the epileptiform attacks. This also calls attention to a means of an early diagnosis of pituitary tumor and may have some surgical significance.

In the second group we find interesting conditions revealed by the *x*-ray. In three cases internal hydrocephalus was shown too by pressure atrophy of the internal plate corresponding to the convolution; one by increased angulation posterior to the anterior fossa. In none of these cases was it possible to make a positive diagnosis of internal hydrocephalus without the *x*-ray findings.

There is an apparent conflict with this interpretation of essential epilepsy with the opinion of investigators in regard to the hereditary nature of this disease, but this conception does not remove this class of cases from hereditary influences as in other cases of glandular deficiency the hereditary tendency is frequently manifested; for example, I have in mind a family of five children, three showing glandular deficiency of the thyroid (marked cases of cretinism).

The convulsive attack in epilepsy being simply one symptom of the disease, it is conceivable that the bony changes may precede the actual onset of the convulsive seizure for a considerable period of time, and, in cases where this local acromegaly is present without the convulsive manifestation, may mean that these cases are potentially epileptic in character, although never developing the major manifestation of the disease.

In regard to treatment by glandular administration many problems must be worked out before arriving at definite conclusions. In the cases showing marked secondary changes in the cerebral cortex it is not conceivable that the administration of the pituitary gland would be of any great value, although possibly diminishing the number of attacks. But this thought also leads to the hope that the early administration of the gland will, in a certain number of cases, prevent the secondary changes taking place. This would be in keeping with our experience in the administration of thyroid in early cases of cretinism.

Dr. R. H. Spangler, Philadelphia: During the past year Dr. G. E. Pfahler of Philadelphia has made for me *x*-ray examination of the heads of forty odd epileptic patients with a special reference to a study of the sella turcica region. Twenty-six of these cases I have been able to follow for six months, or longer.

The *x*-ray studies summarized in these twenty-six cases are, briefly, as follows: The clinoidal processes, anterior and posterior, were both hypertrophied in seven of the cases, they were both rudimentary in two, and the anterior and posterior met in seven. The posterior processes were very dense in three instances; they were lacking in density in eight, and they nearly met in one case. The anterior processes were abnormally long in two of the cases; they were very dense in three, were lacking in density in nine, and nearly met in one instance. In two of the cases a calcareous deposit was apparently present in the sella turcica region. From the above findings the sella turcica region in the twenty-six cases may be grouped as follows: The sella turcica was very small in eight cases, smaller than normal in ten, slightly lessened in size in one, and apparently normal in seven.

The patients' ages ranged from fourteen to forty-two years. Twenty-two were male and four female.

Out of the seven patients with normal sella turcica, five had only major seizures; two had minor seizures, with only occasionally major attacks. Of the nineteen cases showing contracted sella turcica all had both major and minor seizures.

The clotting time of the blood in the nineteen cases was short in each instance, that is, it varied from one and a half to three and one half minutes as tested with a Boggs' coagulometer. The temperatures were subnormal and the pulse rates abnormally slow. While in the seven cases showing no abnormality of the sella turcica the clotting time was only slighty shortened, ranging between four and six minutes, six to seven minutes being considered normal. The temperature was not subnormal and the pulse was not slow but slightly accelerated.

Dr. E. E. Mayer, Pittsburgh: Commendation of original work, such as has been presented to us, is superfluous. If, in addition, time proves its truth, our profession remembers such workers forever.

That the conditions, discovered by Dr. Johnston and shown by him, are almost constantly present in the radiograms of epileptics has been established. I know, as does every one, so little of the true pathology of epilepsy, that I feel unable to discuss the ingenious series of hypotheses set up by Drs. McKennan and Henninger concerning the pathogenesis of the alterations found. If a boxlike structure, an intermittent hyperemia, a backed-up venous supply with engorgement and consequent pressure are the factors at work, could not animal experimentation artificially produce such conditions? And if so, could we not in this way determine how correct these hypotheses might be? Whether biogenetic factors can be ignored is, however, doubtful. But such papers are a refreshing oasis in the dry unproductive run of our usual contributions and should be appreciated by all of us.

Dr. McKennan, closing: There is no doubt in my mind that the anatomical explanation for the increased bony deposit at the base of the skull is a correct one. We do not know the anastomosis of the dural veins of the base of the skull, but we do know that these veins empty into the intercavernous veins. Regarding animal experimentation as suggested by Dr. Mayer, I fail to see how this could be done to improve the points that we have made. We do not make the claim that we have clearly proved the origin of epilepsy. It will take a vast number of observations and probably work in other lines to clear the matter.

THE DOCTOR.

He begins among the poor; all his life, in or out of hospitals, he keeps touch of them always. He sells that which men can neither weigh nor measure, and this sets him above all professions, save one, and far above all forms of mere business. He is bound in honor to profit by no patient, to disclose all he has learned, and to give freely and without regard of his best care to all others of his profession who may be sick. What such a life makes of a man is largely a question of original character, but in no other form of occupation is there such constant food useful to develop all that is best and noblest.—S. Weir Mitchell, "Doctor and Patient."

CLINICAL OBSERVATIONS ON SOME OF THE EFFECTS OF THE GENERAL CONTINUOUS FLOW BATH.*

BY CHAUNCEY L. PALMER, M.D.,
Pittsburgh.

(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Dermatologists have realized the value of the partial and general continuous flow bath in the treatment of various local and general skin diseases. Hebra of Vienna was probably the first to use it for this purpose. Reiss of Berlin some thirty-five or forty years ago, used it in the treatment of various diseases, and described it as the "neutral continuous flow bath," inasmuch as it consisted of ordinary fountain or tap water. He felt that it had no therapeutic effect, but, in some way, seemed to benefit patients suffering with certain chronic nervous affections.

Surgeons have noticed beneficial results from it in the treatment of extensive burns.

At Leukerbad, in Switzerland, the "neutral continuous flow baths" are administered, to many scores of persons, in large tanks, and a great many people, with various chronic ailments, flock there each year, apparently, receiving considerable relief.

In hospitals and sanitariums, "the continuous flow baths" are given in tubs built for this purpose. They are large tubs with a brass pipe attached firmly to the outside of the tub about six inches below the top. A canvas hammock, supported by heavy strips of canvas fastened to the brass pipes on the outside of the tub, is placed in the tub, and the patient is laid gently in the hammock, which can be raised or lowered by adjusting the length of the canvas strips. A pillow is placed under the patient's head and shoulders, and a cold compress on his forehead. The water is allowed to run into the tub until it covers the patient's body completely, with the exception of the head, and the temperature of the water is taken by a floating thermometer. Ordinarily the patient is permitted to remain in the bath from ten minutes to one hour, depending on the condition of the patient and the general effect of the bath. In private homes the ordinary bathtub can be utilized for this purpose by placing a few blankets in the bottom of the tub folded to fit the entire floor of the tub neatly. The patient can be laid on these blankets with the head and shoulders supported by a pillow. A stopper can be placed in the outlet of the tub in such a manner that the inflow will nearly equal the outflow, and the temperature of the water taken with an ordinary floating thermometer.

In hospitals, if the patient is confined in bed, he is placed on a truck and wheeled to the side of the tub and then gently lifted into the canvas hammock. This procedure reduces the question of excitement and manipulation to a minimum in studying the effects of these baths.

In considering the effects noticed, the general continuous flow baths will be divided into two classes: The hot bath, temperature 98° to 108° Fahrenheit, the optimum temperature in most cases being about 101°; and the cold bath, temperature 98° to 88°, the optimum temperature being about 92°.

Outline A will show some of the effects of the hot continuous flow bath.

CONSIDERATION OF THE EFFECTS OF THE HOT CONTINUOUS FLOW BATH.

Blood Pressure. There is a uniform and constant fall in the systolic blood pressure of from five to twenty millimeters, at the same time there is an increase in the pulse rate. This drop in blood pressure occurs in a great variety of conditions, and even in the normal individual, who was selected for a control, it fell fifteen millimeters. It is evident, from the series of cases reported, that those individuals with a high blood pressure respond as well as those with a low blood pressure. This fall in blood pressure probably persists from one to four hours, and the patients seem comfortable. In most instances they sleep quietly for that length of time. In several cases of persistent hypertension there was a gradual decline in blood pressure from day to day, and the patients apparently felt better.

It is difficult to determine just what factors are concerned in this reduction in blood

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*From the Department of Internal Medicine, and the Hydrotherapeutic Department of the South Side Hospital, Pittsburgh.

OUTLINE A.

Case No.	Diagnosis.	Temperature of Bath.	Date.		Blood Pressure.	Temperature.	Pulse.	Respiration.
1036	Acute Mania (alcoholic)	100° both	Nov. 6, '13	Before bath	140	98	104	20
				After bath	130	99	112	24
			Nov. 7, '13	Before bath	160	98.2	88	24
				After bath	145	99	80	20
1289	Acute Alcoholism	100° both	Nov. 6, '13	Before bath	120	99.4	108	26
				After bath	100	99.2	112	26
			Nov. 7, '13	Before bath	120	99	84	24
				After bath	110	99.8	100	24
1446	Pneumonia (alcoholic)	100° to 102°	Nov. 22, '13	Before bath	170	100.4	80	24
				After bath	150	102	108	24
			Nov. 23, '13	Before bath	160	99	98	24
				After bath	150	101	112	30
1445	Acute Alcoholism	98° to 102°	Nov. 24, '13	Before bath	160	101.6	94	30
				After bath	140	102	110	30
			Nov. 25, '13	Before bath	175		108	26
			A.M.	After bath	145		80	26
			Nov. 25, '13	Before bath	150		116	30
			P.M.	After bath	140		120	34
1441	Chronic Alcoholism	100°	Nov. 22, '13	Before bath	175	98	100	24
				After bath	155	99.4	104	24
1798	Chronic Nephritis	98° to 102°	Jan. 19, '14	Before bath	170	98	70	20
				After bath	150	99.8	86	28
1893	Chronic Rheumatism and Nephritis	98° to 102°	Jan. 22, '14	Before bath	165	(Not Recorded)		
				After bath	145	(Not Recorded)		
			Jan. 26, '14	Before bath	160	(Not Recorded)		
				After bath	140	(Not Recorded)		
			Jan. 30, '14	Before bath	165	(Not Recorded)		
				After bath	155	(Not Recorded)		
1887	Trichiniasis	98° to 101°	Jan. 20, '14	Before bath	140	100.6	80	20
				After bath	135	100.8	88	24
			Jan. 21, '14	Before bath	140	100	80	
				After bath	135	101	88	
			Jan. 22, '14	Before bath	135	99.4	86	
				After bath	125	100.8	94	
1900	Trichiniasis	98° to 102°	Feb. 2, '14	Before bath	130	(Not Recorded)		
				After bath	115	(Not Recorded)		
2128	Chronic Interstitial Nephritis	98° to 102°	Feb. 19, '14	Before bath	280	100	100	28
				After bath	260	100	110	34
			Feb. 21, '14	Before bath	215	(Not Recorded)		
				After bath	210	(Not Recorded)		
			Feb. 23, '14	Before bath	190	(Not Recorded)		
				After bath	180	(Not Recorded)		
2200	Cardiovascular Degeneration	102°	Apr. 14, '14	Before bath	110	98	56	22
				After bath	95	101	70	24
Normal Individual	None.	100° to 105°	Apr. 14, '14	Before bath	120	98	80	20
				After bath	105	101	88	20

pressure. It is probable that the continued immersion in the hot water relaxes the peripheral circulation to such an extent that the peripheral resistance of the circulatory apparatus is markedly decreased, thereby certain physical and metabolic changes take place which in turn assist in reducing the blood pressure. No detrimental effects have been noticed in any of these cases from the reduction in blood pressure in this manner.

Temperature. The temperature is increased from one half to two degrees Fahrenheit, which is probably due to the exchange of heat which takes place between the hot water and the patient's body, as it is noticed that the patient's temperature seldom rises as high as the temperature of the bath. No untoward effect has ever been noticed from this elevation in temperature.

Pulse Rate. The pulse rate in nearly all cases is slightly accelerated, which is probably due to the elevation in temperature.

Respiration. The effect on respiration is varied. No definite or uniform increase or de-

OUTLINE B.

Case No.	Diagnosis.	Temperature of Bath.	Date.		Blood Pressure.	Temperature.	Pulse.	Respiration.
1698	Septicemia	96° to 98°	Jan. 14, '14	Before bath		101.2	120	32
				After bath		101	120	24
			Jan. 15, '14	Before bath		100.4	120	28
				After bath		99.6	100	24
1616	Lobar Pneumonia; Pneumococcic Meningitis	98° to 94°	Dec. 15, '13	Before bath		105	140	44
			A.M.	After bath		102.8	136	44
			Dec. 15, '13	Before bath		105	130	44
			P.M.	After bath		102.2	128	36
			Dec. 16, '13	Before bath		105	140	50
				After bath		101.2	120	40
1634	Lobar Pneumonia	98° to 90°	Dec. 19, '13	Before bath		104	104	36
				After bath		101.2	92	28
			Dec. 20, '13	Before bath		102	96	36
				After bath		101	80	36
			Dec. 22, '13	Before bath		101.8	100	36
				After bath		99.6	100	30
1752	Lobar Pneumonia	98° to 92°	Jan. 7, '14	Before bath	120	103	140	44
				After bath	120	100.2	130	32
			Jan. 8, '14	Before bath	115	103	136	44
				After bath	115	100.2	126	44
			Jan. 9, '14	Before bath		103	130	44
				After bath		100	116	30
			Jan. 10, '14	Before bath		102	140	44
				After bath		100	136	33
2200	Cardiovascular Degeneration	98° to 92°	Apr. 15, '14	Before bath	110	98.6	60	20
				After bath	120	98.6	50	20
Normal Individual		98° to 92°	Apr. 15, '14	Before bath	120	98.8	80	22
				After bath	120	97.8	72	22

crease in rate or amplitude being noticed.

Delirium. This type of bath has a marked sedative effect in delirium of all kinds. In the delirium of acute infections or intoxications of any kind or in the delirium of chronic nervous affections this sedative effect is never lacking, and in most instances these patients fall into a quiet natural sleep for several hours. This effect is probably due to the reduction in blood pressure and the general muscular relaxation.

Effect on the Skin. The hot bath acts as powerful and persistent diaphoretic, causing copius perspiration which persists for an hour or longer, and is probably due to the vascular relaxation in the skin.

Outline B will show some of the effects of the cold bath.

CONSIDERATION OF THE EFFECTS OF THE COLD CONTINUOUS FLOW BATH.

Blood Pressure. Because of the fact that the cold continuous flow bath is given for the purpose of reducing the temperature, only a few observations have been made on its effect on blood pressure, but from the cases here recorded it is demonstrated that there is practically no effect on blood pressure.

Temperature. The most marked effect of this bath is the reduction in temperature which it produces, having the power of reducing the temperature from one half to three degrees Fahrenheit, without any particular shock or disagreeable sensation to the patient. The normal individual shows a reduction in his temperature of nearly one degree F. This reduction in temperature is probably due to the exchange of heat between the patient's body and the water, and in only two instances did the patient complain of a sensation of slight chilliness.

Pulse Rate. The pulse rate is generally reduced, which is probably due to the decrease in temperature. There have been no detrimental effects on the circulatory apparatus even in cases of marked cardiovascular changes such as valvular lesions, cardiac arhythmia, hypertrophy, and loss of compensation with low blood pressure.

Respiration. The respiration seems to be slightly decreased in rate but this effect is not constant.

Delirium. The delirium is markedly quieted. The patients apparently feel comfortable and often sleep quietly for several hours after the bath.

CONCLUSIONS.

Because of the constant and fairly uniform reduction in systolic blood pressure which the hot continuous flow bath produces, it is a reliable adjunct in the treatment of any of the chronic diseases in which there is high blood pressure. It also acts as a powerful diaphoretic which seems to be of some value in these cases. It is undoubtedly valuable in the treatment of most any form of delirium, having in the majority of cases a marked sedative effect.

The most important effect of the cold continuous flow bath is the reduction of fever, therefore, it is a valuable aid in the treatment of any of the acute infections accompanied by a high temperature. It never seems to shock the patients as the sudden application of ice-cold water does, and it produces nearly as marked and persistent effect, not only on temperature, but in the relief of nervous symptoms also.

It is not the intention to claim any particular curative effect for these baths, but it seems logical to conclude that they are safe and practical hydrotherapeutic agents, which have certain constant and uniform effects in various conditions.

DISCUSSION.

Dr. Thomas Grier Simonton, Pittsburgh: My experience with the continuous hot flow bath has been limited to the treatment of alcoholic patients with pneumonia. In a series of twenty-six cases the mortality has been 33 ⅓ per cent. Considering the extremely high death rate in this class of cases, this method of treatment has given results that were not formerly obtained. Our observations agree entirely with Dr. Palmer's results in that the effect of the hot flow bath reduces temperature, blood-pressure and pulse rate; is a sedative to the nervous system; quiets the delirium; produces elimination of toxic products by the skin and kidneys; lessens cerebral congestion, and creates a great thirst, so that these patients drink large quantities of water. It is an erroneous idea that this form of treatment is entirely institutional, as it can be carried out in the home easily as he has pointed out. The temperature of hot and cold flow baths does not shock the patients, as the degree of heat and cold is gradually obtained and is decidedly more comfortable to them. Dr. Palmer is to be congratulated in pointing out to the profession the value of these flow baths in any of the infections, and, as we become more familiar with their use, we will begin to realize we have a powerful hydotherapeutic agent at our command to use in combating disease.

LOCAL ANESTHESIA, WITH SPECIAL REFERENCE TO NERVE-BLOCKING.

BY PENN G. SKILLERN, JR., M.D.,
Philadelphia.

(Read in the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

In the limited time at my disposal it is impossible to give more than a hasty review of certain phases of the broad subject of local anesthesia, and I must depend upon the discussion to rectify my errors of omission.

Local anesthesia as at present employed is of particular interest and value to the general practitioner because of its safety, efficiency, ease of employment and, what is often of great importance in emergencies, because of the fact that the services of a special anesthetist are not required, since with a proper knowledge of the technic the most extensive operation may be performed.

Of the methods of local anesthesia the earliest was the ether spray, brought forth by Richardson in 1866, later termed the rhigolene, and now the ethyl chlorid spray. It is quite likely that ice and salt constituted a still earlier method of anesthesia. The ethyl chlorid spray, while benumbing the tissues, yet produces as much if not more pain than the rapid thrust of a sharp bistoury, but nevertheless has a marked psychologic effect in making the patient less apprehensive. Infiltration anesthesia, described by Roberts in 1885 and later developed into a definite method by Reclus and Schleich, has probably reached the acme of use in the anoci-association methods of Crile, in which it serves to prevent traumatic shock impulses from reaching the brain. The most effective and deservedly popular method, however, is that of nerve blocking, in which the conduction of the nerve is interrupted by the anesthetic.

Nerve blocking was first practiced by Halsted in 1885, when he injected cocain into the inferior dental nerve from the buccal cavity. In the same year Corning found experimentally that anesthesia of the lower extremities could be produced by injecting cocain into the subarachnoid space of the spinal membranes, and the practical importance of this discovery was pointed out by Bier. Spinal anesthesia really amounts to nerve blocking upon a great scale. Within recent years it has been proposed to block almost every nerve in the body, and not only the anesthetic but also the therapeutic results have marked a great advance in modern medicine, and the limit of possibilities has not yet been reached. While nerve blocking demanded of the pioneers minute anatomic knowledge, yet the directions for locating a nerve are so exact that but a general working knowledge is now required.

In infiltration anesthesia a sensible suggestion was made by Dubar, in 1912, to color the solution to be employed, and for this purpose he recommended both methylene blue and basic fuchsin. As the color indicates the extent to which the anesthetic has spread through the tissues, there is no danger of the operator incising tissues that have not been anesthetized, the limit of the anesthetic zone having been determined previously only by expressions of pain on the part of the patient. Two other aids were developed that greatly increased the efficiency of infiltration anesthesia. It was noticed that the more rapid the absorption of the anesthetic solution the less marked the anesthesia, for it requires a certain length of time for the drug to act. Hence, by obstructing the centripetal current of lymph and of blood the anesthetic was confined to the operative field. The other aid was the addition of suprarenin to the solution, the degree and duration of anesthesia being thereby materially enhanced. In operations upon the head and trunk, where circular constriction is obviously imperfect or impossible, the suprarenin served the same purpose by constringing the blood vessels, thus preventing their taking up and carrying away the anesthetic, and also rendering the operative field almost bloodless. Hoffman found that by the addition of potassium sulphate the duration of the anesthesia was materially increased, and that a much weaker solution could be employed. By substituting calcium chlorid, Harris prolonged the anesthesia for from two to three hours without difficulty. In employing infiltration-anesthesia it must not be forgotten that much of the solution is liberated from the tissues by the incision, thus preventing the absorption of a considerable portion of the dose into the body.

The spinal nerves are most extensively blocked by spinal anesthesia. In cases where only regional anesthesia is indicated, nearly all the spinal nerves may be reached by blocking the brachial plexus, the intercostal and lumbar nerves, the sacral nerves, and the sciatic nerve. Hirschel was one of the originators of the method of blocking the brachial plexus, his technic being directed toward reaching the nerves in the axilla, while Kulenkampff proposed that the plexus be reached above the clavicle, where the nerves emerge from between the scaleni muscles. The danger of puncture of the axillary vessels is not so great as it seems since, if encountered, they are either pushed aside by the fine needle, or the opening is quite small and causes but little hemorrhage. If, after the needle is inserted, no blood escapes, it is outside of the vessels, and the injection may be proceeded with, thus avoiding introduction of the anesthetic solution into the circulation. The employment of brachial plexus anesthesia is particularly indicated in operations upon the hand, forearm, elbow and upper arm. Fractures and dislocations may be reduced, severed tendons sutured, phlegmons opened, and, in severe cases of neuritis of the upper extremity, the pain may be alleviated. For minor operations upon the hand Braun's methods are excellent, while for the fingers Oberst's digital injections suffice.

In operations upon the thorax and abdomen the intercostal and lumbar nerves are blocked near their exit from the spine, according to the technic described by Kappis in 1912, and known as paravertebral conduction-anesthesia. In the case of extensive and protracted laparotomies, for instance resection of the stomach and intestine, local anesthesia may be satisfactorily combined with general narcosis, which is substituted when the local fails.

In operations upon the lower limb, nerve blocking has not kept pace with its advances upon the upper extremity. Some of the sacral nerves may be reached through the sacral hiatus. Attempts to anesthetize the lumbosacral plexus have so far been unsuccessful, but for the individual nerves there are definite osseous guides, those for the great sciatic having been pointed out by Laewen, Keppler, and Jassenetski-Woino. Most extensive operations, even to resection of the hip, may thus be performed. Obstinate true sciatica may be relieved.

Of the cranial nerves the trigeminus is the one most available for nerve-blocking, the evolution and development of the technic of which are based upon attempts to relieve tic douloureux by injection of the branches of the trigeminus and even the gasserian ganglion itself. The pioneers of this work were Schlosser and Haertel, and it has been developed in America by Patrick, Frazier and others. In approaching an operation for the relief of trigeminal neuralgia it is assumed that every effort has been made to detect an anatomicopathologic basis for the pain,—that the eyes, nose, accessory sinuses, teeth and ears have been subjected to minute examination, that a constitutional cause has been searched for, and that psychasthenia has been eliminated. Impacted teeth and diseased roots constitute a very common cause, and are readily revealed by skiagrams, the important factor being to suspect them. It may be formulated that no more of the trigeminus should be put out of commission than conditions warrant. Thus, when there is pain in the lingual nerve the entire mandibular trunk should not be blocked, for it is important to preserve the sensibility of the lower lip, cheek, and mandibular teeth via inferior dental nerve, thereby preserving the physiologic functions of these parts. It was with this in view that I proposed blocking of the lingual nerve for chronic pain, as from cancer, in the anterior two thirds of the tongue. The advantage of blocking over section of the nerve is that the trigeminus possesses a stronger power of regeneration than any other nerve in the body, and that mere section without excision would relieve the pain only until reunion of the divided ends occurred. In order to remove an ulcer from the tip of the tongue I successfully blocked the lingual nerve as it enters the mouth, the case having been reported in *Surgery, Gynecology and Obstetrics* in July, 1913, page 114. The lingual was not hard to reach, and the anesthesia was perfect. Shortly after this a patient was referred to me with a small epithelioma in the center of the lower lip, without palpable lymph-node metastases. It occurred to me that the growth could be removed by blocking the mental nerve at its foramen, and since the ulcer occupied a median position it was obvious that both nerves had to be blocked. Again the anesthesia was perfect. Since the mental nerves supply dental branches to the lower incisor and canine teeth, genuine painless dentistry is thus possible for more than one fifth of all the teeth, and at least for the most sensitive ones. Toothache in any of the six may be readily relieved. It has been shown recently that an injection through one mental foramen extends as far as the foramen of the opposite side. Had a block dissection of the submaxillary lymph nodes been necessary it would have been quite feasible to have blocked the second cervical nerve at the middle of the posterior border of the sternomastoid muscle.

It was not long after this that a patient presented himself with a rodent ulcer upon the lower half of the right side of the nose, just above the ala. It was decided to desiccate the ulcer with the high-frequency spark, and the problem of anesthesia presented itself. On account of the denseness of the tissues in this situation, and on account of the lateral cartilage of the nose forming the floor of the ulcer, infiltration was not feasible. Being in the territory presided over by the nasal branch of the infraorbital nerve, it occurred to the writer to block that nerve at its emergence from the infraorbital canal. The foramen was found without difficulty, paresthesia obtained, and the nerve blocked. A thorough desiccation was applied without any pain. Since the infraorbital nerve supplies the upper teeth, it seemed possible to infiltrate it in its canal for the relief of toothache and for the painless extraction of teeth. Accordingly, I injected this nerve with methylene blue in a cadaver, exposed the canal by removing the orbital contents, and found that the solution had stained the nerve as far back as the sphenomaxillary fossa. These two cases were reported in *Surgery, Gynecology and Obstetrics*, for March, 1914, page 387.

About a year ago a patient came into my office suffering from a furuncle in the external auditory canal. So painful was the lesion that I hesitated to attack it directly. It occurred to me to block the auriculotemporal nerve, from which the chief supply of the meatus is derived. The nerve was reached between the superficial temporal artery before and the tragus behind. Immediately the pain of the furuncle was relieved and the latter incised without the patient's knowledge. For the relief of pain in the ordinary catarrhal form of otitis media it seems perfectly feasible to infiltrate the tympanic plexus, which supplies the middle ear, by perforating the tympanic membrane with a fine needle and injecting the solution directly upon the inner wall of that cavity.

There is a form of neuralgia described by Sluder as sphenopalatine ganglion neuralgia that usually follows inflammatory processes in the nose, and continues long after the acute inflammation has subsided. He suggested that Meckel's ganglion is involved in the inflammation by contiguity. It is manifested by partly neuralgic (painful) and partly motor, sensory, and gustatory symptoms. The neuralgic picture is that of pain in the root of the nose and in and about the eye, and in the upper jaw and teeth, extending backward under the zygoma to the ear, frequently causing earache and pain in the mastoid. The diagnosis, prognosis and treatment depend upon the ability of the anesthetic solution, when applied to the region of the sphenopalatine foramen, to stop the pain. I encountered one case of Sluder's neuralgia in a patient who suffered excruciating pain whenever he opened his mouth, and who, during an attack, bowed his head and stroked his face from the eye downward in a characteristic manner. Blocking of the infraorbital nerve gave him but partial relief, and it was not until I avulsed the entire infraorbital nerve, dragging Meckel's ganglion with it, that he experienced complete relief.

The methods of blocking the second and third divisions of the trigeminus at the foramen rotundum and foramen ovale, respectively, are well known. The gasserian ganglion itself is reached by the needle and infiltrated for tic douloureux, and more recently has been blocked by Haertel for anesthetic purposes in cranial operations. The solution, especially when alcohol is used, has been known to set up a meningitis. To show how readily the fluid spreads it is my custom when performing these nerve blockings before the class in operative surgery at the Philadelphia Polyclinic to employ methylene blue for the injection, when, by opening the skull from above, the extent of meningeal staining about the foramina is very strikingly shown.

I consider novocain combined with suprarenin as the anesthetic of choice. Novocain is one seventh as toxic as cocain, and equally if not more efficient. To one who has seen disastrous consequences follow the use of cocain this greater margin of safety looms up as a very big factor. As much as fifteen grains of novocain may be injected without unpleasant sequelæ. For ordinary purposes a two per cent. solution of novocain with a 1:3000 solution of suprarenin answers satisfactorily. For permanent blocking seventy per cent. alcohol is used.

DISCUSSION.

Dr. Harvey F. Smith, Harrisburg: The range of application of local anesthesia has grown wonderfully during the last several years. In spite of the fact that ether by the drop method has reached a high degree of efficiency it has many disagreeable features and is not absolutely safe. The advantage of novocain over all previous preparations and improved technic in its use have made infiltration anesthesia a safe and satisfactory procedure to both patient and surgeon. Its use, however, is frequently restricted to minor surgery and an occasional major operation when heart, lung or kidney disease makes it advisable to avoid ether. That abdominal operations are as a rule done more satisfactorily with the aid of a general anesthetic I think all will agree; but occasionally an operation must be done where a minimum postoperative shock is a factor necessary for recovery. In the majority of these cases I believe that it is possible to operate without shock or pain if infiltration anesthesia is supplemented by scopolamin and morphin. This narcotic anesthesia should be started about two hours before the actual operation begins. One hundredth grain of scopolamin with one sixth or one quarter grain of morphin are given hypodermically and half this dose may be repeated in an hour. In the very old and feeble the first hypodermic is usually sufficient to put the patient in a "stupidly comfortable" mental and physical condition.

Let me briefly report a case which will illustrate my point. About six months ago I operated upon a woman fifty years old for an annular carcinoma in the middle of the transverse colon. There had been a gradually increasing intestinal obstruction for three months which was nearly complete for a week prior to operation. Her general condition was serious, due to the long period of persistent vomiting, starvation and absorption of intestinal toxins. The entire large bowel was resected and the ileum anastomosed to the sigmoid. Two drams of ether were used at one stage when the patient became restless. This was not really necessary and did not add to the toxemia or shock. The margin of safety in this case was narrow and I believe her recovery was due largely to the fact that the operation was done with the combined local and narcotic anesthesia and none of this narrow margin was used by ether toxemia. Local anesthesia has a large and positive field of usefulness and while it will not take the place of ether there are certain cases in major surgery where it should be used by preference if we would do our whole duty by the patient.

Dr. J. Torrance Rugh, Philadelphia: For many years, cocain has been held in some disrepute because of its toxic effects. There is no doubt of the greater potency of cocain over the other forms of local anesthetics and that the toxic effects have followed the use of too large dosage. I still prefer cocain to the other drugs and never inject more than three fourths of a grain in a single operation. To guard against possible toxic effects, I have found nothing more efficient than nitroglycerin. It may be given at time of injection of the cocain and in the same dosage of two or three minims of a one per cent. solution. It is a physiologic antagonist of the cocain and completely safeguards the patient.

NARCOTIC ANESTHESIA.

BY G. MASON ASTLEY, M.D.,
Philadelphia.

(Read before the West Branch of the Philadelphia County Medical Society, October 20, 1914.)

Though the opportunities for the use of narcotic anesthesia are somewhat limited, the advantages of the method are so marked in its field of usefulness that a knowledge of it is most useful. The limitations, as with other anesthetics, depend on several factors, such as age, situation of the lesion for operation, the condition of the respiratory and of the renal system. These limiting factors act in the following way:—

Age. Experience appears to demonstrate that this is not the ideal method of anesthesia in patients much under thirty. At this time of life the delirifacient action of the hyoscin or scopolamin employed in the method is at times more marked than in the individual of more mature years. This makes the end result somewhat uncertain under such circumstances, though it is possible, if inhalation anesthesia be not contraindicated, to overcome this tendency to delirium with a minimal amount of ether and secure at the same time many of the advantages of the narcotic anesthetic.

Situation of the Lesion for Which Operation Is Demanded. Narcotic anesthesia finds its largest field of usefulness in lesions above the diaphragm. For abdominal work, which to secure best results should be done in a relaxed field, it is not the method of choice, because complete relaxation is frequently not obtained.

Respiratory System. The drugs employed in narcotic anesthesia are respiratory depressants; hence, where pathologic conditions are marked in the lung, with consequent limitation of the respiratory area, extreme caution is necessary if it be employed.

Renal Conditions. With regard to renal conditions, the well-known deleterious effect of large doses of opium or its alkaloids in chronic interstitial nephritis at once makes us hesitate where there is evidence of the existence of such lesions.

With such a formidable array of contraindications, what then are the conditions under which this anesthetic may be employed? Briefly, they are those conditions about the upper thorax, neck and head in which the previously mentioned contraindications are not existent. The list would therefore include conditions of the breast, whether malignant or benign; affections of the shoulder, girdle or upper extremity; new growths of the thyroid or lymphatic structures of the neck; malignant conditions of the upper respiratory and digestive tracts; and affections of the face and skull, whether of inflammatory, neoplastic or plastic character.

The chief advantages of the anesthetic under such circumstances are: The ability to obtain a smooth continued anesthesia, in contradistinction to the intermittent anesthetization obtained when intratracheal insufflation can not be used, and to avoid the interference and danger of contamination in the operative field by the presence of the anesthetist. A further and very distinct advantage of narcotic anesthesia is its ability to produce loss of consciousness without the distressingly acute and long-remembered suffering of the preanesthesia period.

This is without doubt of signal benefit where, through previous experience or by reason of temperament, fear of etherization is a deterrent to consent for operation. Anesthesia is obtained in a pleasant manner, without a depressing inheritance of objectionable impressions and is followed by a postoperative sleep of three to six or more hours' duration from which the patient awakes without knowledge of anything having occurred. By complete coöperation of patient and attendants it is possible to anesthetize and operate upon an individual without leaving any recollection whatever of the procedure. Where nerve tension is high and operative fear marked, this is of inestimable benefit. It leaves none of the marked psychic depression occasionally met, and, where conditions demand, it is entirely feasible to anesthetize the patient at home, transport to a near-by hospital, operate and return the patient to the home before consciousness is restored. Combined with local anesthesia it fulfills admirably the designs of the anoci-association technic of Crile.

In discussing the question of technic there are several points to be kept in mind: (1) That, as with inhalation anesthesia, the dose and variations must be adapted to the individual; (2) that it is just as important to keep the air ways free with this as when administering inhalation anesthesia.

As worked out in the service of Dr. Babcock at the Samaritan Hospital, the following general plan is used:—

Preparation of the patient as for the usual method is carried out and the anesthetization begun an hour and a half before the scheduled time of operation by the hypodermic injection of one sixth of a grain of morphin and 1/100 of a grain of hyoscin or scopolamin hydrobromid. It is not necessary that this dose be a fixed one, for the age of the patient, the general physical development and any condition of toxemia might make a change advisable. I believe it well never to exceed a quarter of a grain as the maximum at this time. It is seldom necessary to go as low as an eighth.

A second hypodermic of similar dosage is given at the end of twenty minutes and the patient carefully watched for half an hour. The third hypodermic is varied according to the condition of the patient at this time. With varying susceptibilities to the drugs, different patients will show somewhat dissimilar reactions and the narcotics must be varied to suit the individual needs. If the patient be somewhat feeble or moderately toxic from disease sufficient anesthesia may have already been obtained, as shown by continuation of sleep despite irritation as produced by vigorous shaking or pinching. If the individual be robust sleep may not yet have appeared and then a third hypodermic similar to the second should be given. Again, in other patients the hyoscin or morphin element may be predominant, and under these circumstances one or the other should be omitted. If the patient show the flushed face and delirium of hyoscin then the third hypodermic should contain morphin, or morphin and apomorphin, as will be mentioned in more detail later. If the patient show the pallid skin and the slow pulse of morphin, but still respond to stimuli, then the hyoscin or scopolamin should be repeated alone. The addition of apomorphin to the third hypodermic is often of the greatest value. I have yet to see it act as an emetic under these circumstances. It must however be used with caution for it is an active depressant, prompt in its sedative and relaxant action, but prostrating if by reason of toxemia or cardiac weakness the patient is nonresistant.

The dosage employed varies from one twentieth to one tenth of a grain, according to the vitality of the patient, and its use is indicated where the patient after the second hypodermic, though somnolent, will still respond to rough stimuli; or where the hyoscin action is marked, as shown by the flushed face and delirium.

After its use the continuous watching of the air ways is imperative. The same relaxation obtained elsewhere appears in the muscles of the pharynx and floor of the mouth, and consequent dropping back of the tongue with closure of the glottis may occur. It is to be avoided by holding the jaw or tongue forward by the usual methods, and proof of continuous patency of the air passages is given by placing a fine wisp of cotton before the nose. It is to be remembered that respiration and attempts at respiration are two different things. It is essential that the positive evidence of the movement of air be given and this is easily obtained by the use of cotton as before mentioned. Should the respiration become unduly slow stimluation in the form of strychnin or caffein can be given, but the need of them is very infrequent when doses are graded as described and the breathing passages kept clear. Recovery may be hastened by the rectal injection of large saline enemata combined with coffee, if added stimulation be deemed advantageous.

In brief summary, then, we may say that narcotic anesthesia is of advantage where inhalation anesthesia is contraindicated through fear of nervous excitement; where, if intratracheal insufflation can not be followed, in operations about the upper air passages the anesthesia is interrupted or the operative procedure is interfered with by the anesthetist; and in those cases of lesions above the diaphragm, such as cancer of the breast or neck, or cranial or facial lesions, where there are no contraindications to the use of narcotics.

SPINAL ANESTHESIA.

BY WILLIAM A. STEEL, M.D.,
Philadelphia.

(Read before the West Branch of the Philadelphia County Medical Society, October 20, 1914.)

The past decade has witnessed a world-wide tendency on the part of the surgeons to get away from the disadvantages of the routine inhalation anesthetics, ether and chloroform, hoping to substitute for them other procedures with a lower mortality and fewer bad aftereffects. And so rectal, intravenous, narcotic, spinal, regional and massive local methods; the inhalation of ethyl chlorid pure or in combinations and of nitrous-oxid oxygen have been introduced, have had their day of popularity and have remained with us as accepted methods, or have disappeared according to their degree of safety or efficiency.

TECHNIC OF PRODUCING SPINAL ANESTHESIA.

Spinal, or better intradural, anesthesia is a form of massive regional anesthesia in which the anesthetizing substance is thrown into the enveloping lymph jacket which surrounds the spinal cord. The spinal nerves, in passing from the cord to the body areas supplied by them, lie for varying distances within this lymph sheath and any anesthetizing substance thrown into it will bathe the nerve roots, and render anesthetic body areas supplied by their terminal filaments. The injection is not made into any nerve tissue, but around it. Neither the spinal cord nor its nerve off-shoots are punctured. Indeed the principle is the same as in the cocainization of a finger tip; in which procedure the drug comes in contact with the terminal nerve filaments through the intercellular lymph spaces; while in spinal anesthesia it comes in contact with the nerve roots through the intradural lymph space.

The result of seven years' clinical experience, during which every substance recommended to produce intradural anesthesia has been tried, has led us to regard stovain as the most reliable and efficient drug for the purpose. Its liability to decompose in old solutions and thus to produce annoying aftereffects, led us to have the drug prepared in eight hundredths of a gram tablets, similar to the usual hypodermic tablet and sterilized by the same ether method. A lot prepared one and one half years ago is still giving perfect satisfaction. Their sterility has been questioned, but the entire absence of infection following their extensive use is a convincing answer. For each anesthesia, a tablet is dissolved in the contents of a two-cubic-centimeter ampule of sterile water, containing five per cent. alcohol and one half a minim of lactic acid. The five per cent. alcohol makes the specific gravity of the stovain solution approximately .995. The specific gravity of cerebrospinal fluid, the lightest body fluid, is 1.005. This lighter specific gravity of the injected solution gives us a limited control of its action, as by raising or lowering the shoulders it will work to a higher or lower level in the subarachnoid lymph and exert its action on nerve roots arising from corresponding cord segments. Diffusion, irrespective of position, plays an important rôle in its distribution; this is so marked in the usually recommended ten per cent. alcoholic solution that high effects, evidenced by any embarrassed respiration and a low blood pressure, frequently occur with a poor low cord anesthesia.

Barker accomplishes the same end by the use of heavy glucose solutions allowing them to gravitate to the desired level. The lactic acid acidulates the alkaline cerebrospinal fluid and prevents its precipitation when mixed with the alkaloid stovain. The syringe employed is a two-cubic-centimeter glass Luer, the needle on one made of irido-platinum, 19 s-w. gauge, three and one half inches long. Steel needles rust on the inside, become friable, and may break off in the tissues.

At the time of preparing the field of operation, the patient's back is painted from the angles of the scapulæ to the iliac crests, with a five per cent. solution of iodin crystals in acetone and covered with dry sterile gauze held in place by an abdominal binder, pinned down the back. Each patient receives one or two hypodermic doses of morphin, one sixth of a grain, and scopolamin, one hundredth of a grain, one and one half and three quarters of an hour before operation. To further bar out emotional shock the eyes are bandaged and avoidable noises prohibited.

The patient is lifted from the stretcher and seated on the operating table as though on a bench, legs hanging down and buttocks well back on the table. The anesthetist grasping the head and neck under his arm, arches out the back separating the spinous processes and widening the space between the vertebral laminæ. The binder and sterile dressings are removed and the site of injection washed with seventy per cent. alcohol. The vertebral interspaces are best located by stretching a towel across the back touching the highest point of the iliac crests. This passes through the spine of the fourth lumbar vertebra, counting upward the desired interspace is marked by the thumb-nail, frozen with ethyl chlorid if the patient is awake, and the needle introduced at right angles to the plane of the back, about one eighth of an inch from the mid line. It is forced inward until the resistance of the intervertebral ligaments is met, the stylet withdrawn and the needle again forced in until the snap of its piercing the dura is felt, when the escape of cerebrospinal announces its entrance into the subarachnoid space. If a high intradural pressure exists the fluid is allowed to escape until a slower dropping shows a reduced tension; with a normal or low pressure the syringe with its dose of stovain is at once attached to the needle and the injection is slowly given; before withdrawing the needle the syringe is sucked full twice more and reinjected to insure a good local diffusion of the anesthetic. A sterile towel is thrown over the puncture wound and the patient laid prone with a wisp of cotton tucked under the eye bandage and hung over the end of nose to act as a respiratory indicator.

If bone is met with, the line of introduction is raised or lowered. Even though lymph may drop from the needle the injection is not given unless fluid can be drawn freely into the syringe. The depth at which the dura is reached varies from one and one half inches in thin subjects, to three inches in the very obese. If the sitting posture is contraindicated the injection may be given with the patient lying on the side with a sandbag under the loin to give the back a lateral arch. In this position one must account for a lessened intradural pressure. The injection is given in the second lumbar interspace for leg and perineal operations; in the first interspace for low abdominal work and in the first dorsal interspace for operations on the upper abdomen. The average adult dose is six hundredths of a gram; children take relatively large doses, twenty-five thousandths of a gram being given to an infant and four hundredths of a gram to a child of twelve. Pain sense is lost first, then tactile sense, then there is motor paralysis. With complete anesthesia muscular relaxation is absolute. The height of sensory anesthesia varies from the umbilicus in low injections to the nipple line in high injections; rarely it may extend upward to the clavicles. The average duration of anesthesia is forty-five minutes. Repeated injections appear to be harmless; one of our cases received it four times within six weeks without bad effect.

Despite the brilliant work of Jonnesco in using high dorsal injections for operations above the nipple line, the nicety of dosage required to achieve sensory paralysis with remaining motor efficiency has led us to abandon it as a safe anesthetic in these regions.

COMPLICATIONS.

The ensuing statistics and conclusions are derived from 1500 personal injections. While the recent paper of Dr. W. W. Babcock reporting 5000 cases has been drawn upon for cooperative evidence, Dr. Babcock's huge experience and unbiased attitude make his work authoritative.

Complications are due to unreliable preparations, decomposition products the results of age or overheating, over dosage or a faulty technic.

High Effects. These are due to rapid diffusion of stovain in the cerebrospinal fluid with involvement of the medulla and muscles of respiration. They are evidenced by shock, fall of blood pressure and embarrassed respiration. They are controlled by raising the foot of the table and by hypodermic injections of strychnin and caffein; rarely intravenous stimulation is necessary. This complication is rarely seen where five per cent. alcoholic solutions are used, the dose properly gauged and the patient partly narcotized.

Visceral Irritations. While no physiological data are available, stovain is probably eliminated by the general excretory system. Repeated series of urinary tests have failed to show evidence of nephritis and we regard it as free from kidney irritation. Clinical observation has demonstrated its lack of deleterious action on the digestive tract, lungs or heart muscle.

Degeneration of the Nervous System. No myelopathies or cerebral degenerations have occurred in our series of cases. Those reported from abroad were probably due to the septic conditions causing death and not to the anesthetic. One case of peripheral nerve involvement has taken place, this a sciatic nerve paralysis where the injections were thrown into the nerve root. Complete recovery followed. The popularity and alleged safety of local anesthesia with peri- and intraneural injections for nerve blocking, has led us to take a much less serious view of accidental puncture and injection into the cords of the cauda equina. Two cases of transient abducens palsy occurred in the early stages of our work. The paralysis came on during the fifth and sixth day following injection. Both patients complained of severe occipital headaches. Both cleared up during the third week under sweating and elimination. Five cases reported by Dr. Babcock followed practically the same course. As to why this one nerve should be the one constantly affected, neurologists do not give us a clue. In our two cases the cerebrospinal fluid was sterile and of normal lymphocyte count, facts which oppose the theory of infection, and one is inclined to credit the neuritis to the presence in old or decomposed solutions of a chemical toxin, with a special nerve affinity, similar to diphtheria toxin.

Deaths. No fatalities have occurred in 1500 personal anesthesias. Dr. Babcock reports ten deaths on the operating table in 5000 injections. Commenting on this mortality he says, "Five patients were in a hopeless condition under any form of treatment and four were operated upon during the period of enthusiasm which comes with a new method." "Three patients died during or after operations for large empyema. With these patients operation was impracticable on account of the pulmonary lesions. Two patients died under operation for gallbladder disease associated with peritonitis. The first was drowned by profuse regurgitant vomiting. The second a man of the purple type of cardiac weakness developed respiratory failure. None of the ten were in even a fair condition at the time of operation."

The ten fatalities sum up as seven sure deaths with or without operation; and three in which the lesion lay above the diaphragm, the upper limit of safety.

Moribund cases, where operation is insisted upon, are now given massive novocain infiltration, and although the patients die just the same, the professional mind is so convinced of the harmlessness of this form of anesthesia that the outcome is rightly attributed to the condition and not to the method of operating.

Headache. The one real distressing complication is the meningeal headache which occurs in about ten per cent. of our cases. It lasts from a few hours to a week; clears up generally within twelve hours and if persisting over that time yields readily to hot packs and pilocarpin sweats. Postoperative withdrawal of cerebrospinal fluid has no effect on the condition.

It is found that with certain lots of stovain, headache is an almost constant sequela: with other lots it rarely occurs. It is attributed to the same toxic by-products which when in excess causes ocular palsy. I believe drug idiosyncrasy also to be a factor, as a patient having headache after one stovain injection will develop it with each succeeding anesthesia.

ADVANTAGES.

In the hands of those properly trained, clinical experience has shown that intradural anesthesia has the following advantages over the usually employed inhalation anesthetics:—

1. The surgeon has control of his own anesthesia. This is a matter of no small moment in a general hospital service, where the inexperience of the ever-changing resident anesthetist may cause more anxiety than the operation itself. It lessens the required number of trained assistants.

2. The absence of pre- or postanesthetic struggling. The occasional wrestling bout, developed as a sequela of the stage of excitement in ether anesthesia, may do damage to any acute surgical condition, while the contortions of postanesthetic retching, vomiting and delirium interferes with wound coaptation or may cause the loosening of a poorly tied ligature. Stovain anesthesia bars out such possibilities, and excludes physical exhaustion as a factor in the combination of events which tends to produce postoperative shock.

3. It is a time-saver in emergency work. The patient is anesthetized and ready three minutes after the injection is given. Its rapidity, simplicity of equipment and combination of operator and anesthetist would seem to indicate its use in the field of military surgery.

4. It lessens bleeding. One does not see the capillary hemorrhage incident to the increased blood pressure of ether or nitrous-oxid narcosis.

5. In operations on septic cases, there is not the added strain of the elimination of a general anesthetic which might be sufficient to overwhelm an exhausted patient. Also, stovain does not anesthetize the phagocytes, nor is it a lipoid solvent.

6. It gives complete muscular relaxation; hence, facilitates the operation; makes tissue bruising retraction unnecessary and does away with the use of bulky intraäbdominal pads. By so reducing peritoneal trauma the patient is less shocked and, later, experiences fewer gas and incisional pains.

7. It can be used without increasing the visceral irritation, in operating on patients with damaged kidneys, heart and lungs.

8. It gives complete and absolute nerve block. At the point of injection it shuts off all afferent nerve impulses from the seat of operation to the brain. The preliminary narcosis excludes psychic impulses. This combination together with gentle operative manipulations probably gives the most complete state of anoci-association (Crile) possible to attain.

9. In certain obstetric procedures, forceps operations can be expeditiously carried out under poor surroundings without the aid of trained assistants. The cessation of suffering within a few minutes of giving the injection, and the assurance of a speedy termination of her troubles, gives the patient confidence to assist in the operation by throwing her arms over her head and holding the opposite side of the bed, so making counter traction. Following delivery the anesthetized and relaxed perineum gives a perfect field for accurate repair work.

Curetment for retained secundines is marked by the absence of the whistling hemorrhage so often a sequela of ether narcosis. Due to the fact that under spinal anesthesia uterine contractions are not entirely abolished the organ shuts down on itself as its cavity is emptied. Often the contraction is so marked that several cervical dilatations may be necessary during the curetage.

We believe spinal anesthesia is to be of especial advantage in operations for septic intraäbdominal conditions, strangulated hernia, prostatic hypertrophy, rectal surgery, emergency forceps work, curetage for retained secundines, amputations of the lower extremity osteomyelitis and in reducing dislocations and fractures of the lower extremity.

DISADVANTAGES.

Lack of reliability of proprietary stovain. While claims to the contrary are not lacking, clinical experience unfortunately shows that stovain is not rigidly standardized. Variations in activity of different samples may amount to as much as twenty per cent., and physiologically toxic by-products may be present in others which answer every test for chemical purity. When a new lot of tablets is ordered we specify that they shall all be made from the same sample, and the salt is personally tested out in a series of cases before allowing the tablets to be made in bulk.

Skill is necessary for its proper use. Spinal anesthesia is not for the occasional user or to be adopted when other plans of anesthesia are deemed dangerous. The operator must have had a thorough apprenticeship, understand its technic, dose, method of diffusion and be prepared to meet emergencies. Like nitrous-oxid oxygen, intravenous, rectal and narcotic anesthesia it should be restricted in use to those who have properly qualified themselves.

It is not safely applicable to operation above the diaphragm; over dosage or injections above the twelfth dorsal interspace may be attended with high spinal effects and disaster.

It is unsafe in conditions of shock or exhaustion. Authors have dwelled upon a low blood pressure as a positive contraindication. If the dose is properly gauged and slowly diffusing (five per cent. alcoholic) solutions used, shock is not increased, while the valuable teachings of Crile in relation to the treatment of shock, will, if put into practice, largely rob this complication of its terror.

CONCLUSIONS.

Every carpenter works best with his own tools. The record of 50,000 etherizations at the Mayo Clinic without mortality is unparalleled. The 35,000 nitrous-oxid oxygen anesthesias at the Lakeside Hospital without a death is a wonderful achievement. The statement that massive local infiltration is harmless hails it as the coming anesthetic procedure. And yet almost daily deaths under ether or directly traceable to it occur. My personal observation has convinced me that nitrous oxid in any efficient combination is a dangerous anesthetic for prolonged operations. And the desperately ill die under our hands or shortly afterward with novocain infiltration.

Such contradictions can have but one meaning; that safety often depends less on the anesthetic than it does on the condition under which it is given. And while personally I prefer spinal anesthesia in all cases where applicable, for general indiscriminate use less harm can be done with ether than with any other method, and it still remains the standard anesthetic despite its many drawbacks.

SOME METHODS AND DEVICES IN THE CORRECTION OF THE NASAL SEPTUM THAT MAKE FOR SUCCESS.

BY GEORGE MORLEY MARSHALL, M.D.,
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(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

The three main objects of nasal surgery are first, to secure free nasal breathing; second, to remove infection of sinuses by free drainage; third, to correct unsightly deformities. Operations on the septum may contribute to all three objects. For the Killian submucous resection, we are all great debtors. But there are certain septums that obstruct nasal breathing which are not suitable for the submucous operation; for example, the thin septum with atrophic mucous membranes, or, where the mucous membranes are largely scar tissue resulting from old ulcerations, so common where the patient by his own efforts tries to free the obstruction.

Many deviated septums we can proceed with as follows: The septum is weakened at its base at the maxillary attachment, and, if necessary with the palate bone as well, this is done with a chisel and Asch's forceps, the latter being used to complete the fracture and straighten the septum. If the septum now becomes redundant it may be because it is held down by the depressed nasal processes, which, when severed at the base, allow it to rise and be free to be placed in alignment. Occasionally the quadrilateral cartilage in its anterior part is bent to one side, leaving the columna and appearing as an obstruction in the naris. The anterior border of this cartilage should be subcutaneously freed at what should be its columna attachment, and an incision should be made from below upward between the curved edges of the oval cartilages where it should be made to resume its proper place. This it will do after a triangular wedge-shaped portion is removed from the convex curve of the cartilage from its upper to the lower edge.

Even when the septum is corrected in those cases of narrow or collapsed nares, the opening for air is insufficient. The wings of the nose seem powerless, the dilator muscles paralyzed. But the condition is really, I believe, largely the fault of the bones where those tiny muscles are attached; the anterior edge of the nasal processes of the superior maxillary, is turned in so that contraction of the dilator naris is useless and therefore no attempt is made to exercise it. But let these edges be turned out, as can easily be done after the base of these processes are severed, and held so by bell-shaped splints. Of course, in this way a permanently larger naris is given, but it also seems to stimulate the use of the dilator muscles. Not only does the patient get more air, but he assumes the appearance of greater energy and vitality. Who has not felt the tremendous vigor portrayed by the dilated nostrils of the war horse? Let us give patients the benefit of these muscles and also the less need of them.

To recapitulate the steps that may be taken to correct an obstructing septum where the submucous resection is not available: First, weaken the maxillary attachment at the base of the deviated septum by a chisel, fracture at this point, and straighten by the broad blades of the forceps. Second, free the attachment at the anterior edge of the quadrilateral cartilage, if it has at this border left the columna, also free it if it has left its anchorage between the down-curved edges of the oval cartilages where it properly belongs, and cut a new median line between these oval cartilages for its replacement, also cutting out a wedge-shaped line on the convex curve of the cartilage. Third, if the septum is depressed or held out of alignment cut the superior maxillary processes at their base; this is done by a small incision on the cutaneous surface just large enough to admit the edge of the chisel. Fourth, hold these in place with an outward turn by the use of bell-shaped splints. Fifth, hold the alignment and prevent synechiæ by supporting the septum with smooth celluloid plates. These plates should also be used when the submucous resection can not be complete because of scar tissue. All the mucous membrane possible, however, should be saved, the fragments of the ragged edges adjusted and these protected by the celluloid plate. This plate is nonirritating and mildly antiseptic. It will allow the serum exuded to be retained to nourish these fragments until they adhere and the circulation is reëstablished. They also protect the tender epithelial cells that are formed in the advancing edge in the healing process. These plates are held snugly in place, and with slight pressure if needed, by packing of narrow iodoform strips of gauze in which the powder of desiccated alum may be placed if hemorrhage is anticipated.

There are many cases I believe, where the above described method can wisely be combined with Killian's submucous resection, especially where the latter would require such an extensive removal of cartilage as to give inadequate support to the anterior portion of the nose, and so, on the other hand, this method described is insufficient to meet some conditions so brilliantly met by the submucous resection alone.

TRIFACIAL NEURALGIA FROM NASAL AND ACCESSORY SINUS DISEASE.

BY GEORGE B. JOBSON, M.D.,
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(Read before the Section on Eye, Ear, Nose and Throat Diseases, Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

A brief review of the anatomy of the fifth cranial, trifacial, or trigeminal, nerve recalls to mind that it is the largest of the cranial nerves. It is the great sensor nerve of the head and face, and the motor nerve of the muscles of mastication. Its upper two divisions are entirely sensory, the third or lower division is partly sensory and partly motor. It emerges from the upper part of the pons by a large dorsal, or sensory root, and a small ventral or motor root. At the apex of the petrous bone, the fibers of the sensory root appear to form the large gasserian ganglion, while the motor root passes beneath the ganglion without having any connection with it, and joins outside the cranium with the inferior trunk derived from the ganglion.

The first division, or ophthalmic nerve, divides into frontal, lacrymal, and nasal branches, which emerge from the cranial cavity through the sphenoidal fissure, into the orbit.

These sensory branches supply the cornea, ciliary muscle, iris, lacrymal gland, part of the mucous lining of the nasal fossæ, and to the integument of the eyelids, eyebrow, forehead and nose.

The second division of the trifacial, or superior maxillary, passes through the foramen rotundum, across the sphenoidal fossa and through the infraorbital canal, emerging at the infraorbital foramen, to terminate in the palpebral and nasal branches. The superior maxillary nerve is the sensory nerve to the side of the nose, the lower eyelid, upper lip, part of the mucous membrane of the nostrils, mucous lining of the accessory sinuses, mouth and upper pharynx.

The third division, or inferior maxillary, or mandibular, nerve which contains motor and sensory fibers, has its exit through the foramen ovale. The inferior maxillary nerve distributes branches to the teeth, and gums of the mandible, the integument of the temple, and external ear, the lower part of the face, and lower lip, also to the muscles of mastication, and a large branch to the tongue.

A perusal of the literature on the subject of trifacial neuralgia, shows the wonderful difference that exists among medical men, relative to the pathology and treatment of this most painful affection. For years, physicians have tried to find some means of giving permanent relief to these sufferers, and treatment has varied according to changing ideas of the cause and pathology of the disease. For some time it has been known that certain constitutional conditions may cause neuralgia of the trigeminal nerve.

It is not the purpose of this paper, however, to deal with neuralgia, dependent upon constitutional states of the body, but to limit it to trifacial neuralgia, the result of intranasal and accessory sinus disease.

Trifacial neuralgia is a disease of a sensory branch or branches of the trifacial nerve or its peripheral distribution, which is manifested by intermittent pain of a severe, darting or throbbing character. The seat of pain is practically constant, and unless additional tissue is involved, it is seldom that the neuralgia changes its position. If the main branches are affected, it may extend to others.

The pathology of neuralgia is indefinite. Starr says: The lesions are in the neurone bodies of the ganglion. These neurone bodies have been found in different stages of degeneration. The fibers within the ganglion in some cases are swollen, the medullary sheath disintegrated, the axone granular. In other fibers the sheath is full of a disintegrated mass in which the axone can not be distinguished. In still others the sheath is empty. The connective tissue about the neurone bodies and about the fibers is increased in density. All forms of sclerosis and atheroma have been seen in the vessels.

Spiller classifies neuralgia into three different types: One in which the lesion is primarily a neuritis of the peripheral branches, and which in time may, or may not extend to and involve the ganglion; another in which the ganglion is affected primarily; and a third, perhaps, in which the lesion is neither in the ganglion, nor its branches, but in the central nervous system. In some instances, says Spiller, the process is a degeneration, in others an interstitial neuritis, or the primary lesion may be a neoplasm.

The same author in 1898, examined seven ganglia, which were removed by Keen, and found the medullary substance of the fibers within the ganglia and their branches much swollen, atrophied, or entirely gone, depending on the intensity of the disease. The axis cylinders were similarly markedly degenerated or destroyed. The vessels were distinctly sclerotic; there was also an increase in the connective tissue of the ganglion.

Caminiti says that at times such cellular changes occur without neuralgia having existed. Cases of neuralgia are on record in which the ganglion on removal showed no microscopic change. Other cases are reported as having been temporarily cured by division of the offending branch of the fifth nerve, the pain again returning after regeneration of the nerve branch. This would seem to prove that the ganglion in these cases was unaffected in its entirety at least.

The majority of writers in discussing the subject of trifacial neuralgia, state that only a small number of the cases are due to peripheral irritation. The writer's opinion does not coincide with this statement, but he thinks that the nasal chambers and accessory sinuses are a frequent and unrecognized cause in many cases; as he demonstrated the etiology of two cases to be due to nasal involvement, which were classed by several eminent diagnosticians as idiopathic cases. The mistake in these cases was due to the fact that the nose was not considered as a factor and was examined very superficially. This statement is not meant to convey the idea that an abnormal nasal condition in a neuralgic subject is always the cause. The nasal interior may be abnormal, yet the neuralgia be from disease of distant parts.

Of all the affections involving the nasal chambers aside from sinusitis, hypertrophy of the turbinates, especially of the middle turbinate, is the most frequent cause of neuralgia, from pressure against the septum. Spurs, ridges, or deflections of sufficient size to cause pressure on the opposite tissues would have the same effect. This is illustrated by the following case:—

Mr. H., aged sixty-seven, went to Bad Nauheim in the winter of 1910, and was treated for trifacial neuralgia by baths, regulated diet, and a variety of medicines, without being cured. He returned to this country in the summer of 1911, and, in one of our large cities, consulted successively, a dental surgeon, who thought a tooth was the offending agent, and extracted it, without giving relief; an ophthalmologist, whose report was negative; and a neurologist, who was in doubt as to the cause, but thought the nose might be at fault. On September 23, 1911, the writer was consulted. The patient at this time was suffering excruciating paroxysms of pain over the entire left supraorbital, frontal, malar and supramaxillary regions, accompanied with frequent severe muscular contractures, principally about the left eye. A careful examination of the nasal chambers did not at first disclose any marked abnormality.

As a means of diagnosis, a four per cent. cocain solution with adrenalin was sprayed into the left nostril, without communicating to the patient what it was. In a short time the pain ceased, and the muscular spasm left. A second examination showed a large spur, projecting from the posterior part of the septum. The spur was cocainized more thoroughly and removed. When examined, a piece of membrane from the posterior end of the inferior turbinate was found attached to the spur's apex, so firmly was it united to the turbinate.

The protracted siege of neuralgia, with the shock from the operation, made recovery slow, but eventually health was restored, and the patient was free from neuralgia until August 1, 1914. On this date, slight pain and tingling of the left supraorbital and frontal regions were complained of. The posterior part of the inferior turbinate was found considerably enlarged and was treated without benefit. The neuralgia becoming more severe, the posterior third of the left inferior turbinate was removed on August 6, 1914, followed by cessation of pain after the cut surface had healed.

Neuralgia from maxillary sinusitis is not as common as is frontal sinusitis, for the reason that the maxillary sinus does not allow of as great pressure from retained morbid secretions as does the frontal sinus, owing to the difference in physical conformation. Infraorbital, supraorbital and dental neuralgia are not uncommon in antral disease, however.

In chronic empyema of the maxillary sinus the pain is not so common as in acute antral disease, but when present it may resemble migraine, involving half of the head. Or there may be pain limited to the surface over the antrum, which is usually worse in the morning. Following is a case of empyema of the maxillary sinus:—

Mr. G., aged thirty-two, had intense pain over right facial surface of antrum, with infraorbital and dental neuralgia. A dentist had perforated the canine fossa which did not drain sufficiently to relieve. The anterior third of the lower turbinate was removed, and a large perforation made into the antrum through the nasal wall, which gave exit to the retained pus and abolition of the neuralgia.

Acute frontal sinusitis is accompanied with headache, and frequently with neuralgia. A case illustrating this condition follows:—

Mr. H., aged thirty-five, developed acute rhinitis with severe left supraorbital neuralgia. The left middle turbinate was swollen and pressed against the septum. Cocain and adrenalin solution reduced the swollen turbinate, and with free discharge from the frontal sinus, there was complete relief.

As the branches of the supraorbital nerve ramify over the anterior and inferior walls of the frontal sinus, and are irritated by the presence of pus or by pressure; supraorbital neuralgia of the same side is frequent, in all forms of frontal sinusitis. Sphenoidal sinusitis is no doubt frequently overlooked, from the deep location of the sphenoidal cavity. Neuralgia in this variety does occur, although it is not as frequent as deep-seated headache cases.

Mr. E. S., aged twenty-eight, had an attack of acute rhinitis, followed in about a week with very severe pain in the center of the head, vertigo, and disturbance of vision. Examination revealed an acutely inflamed and enlarged middle turbinate on the left side. Pus showed on the pharyngeal wall. The middle turbinate was removed and the sphenoidal opening enlarged, followed by a free discharge of pus. The posterior ethmoidal cells were discharging pus, and they were curetted. In three days, the patient was free from pain, vertigo and visual disturbances.

Ethmoidal sinusitis more often causes headache than neuralgia. If the pus contained in the ethmoid cells is under pressure, it may cause supraorbital, occipital or basal neuralgia. Some contend that when the anterior and middle ethmoid cells are diseased, the pain will be in the upper part of the face or vertex. And if the posterior ethmoid cells are affected, the pain will be vertical and occipital. The experience of the writer is that the localization of the disease is vague and uncertain, if we are to judge by the seat of the pain, as is illustrated by the following case.

Mr. T., aged forty-one, had slight purulent discharge from right nostril for several years. For more than a year he had been affected with severe headache and supraorbital neuralgia. For the past two months he had had asthma, in addition to the pain. An examination revealed an enlarged and soggy middle turbinate with three polypi attached, and pus exuding from around the mass. The turbinate and polypi were removed, and the anterior ethmoidal cells were seen to be discharging pus. These were curetted, and the pain was relieved. The asthma was less severe, but not cured, when the patient was last seen.

The most intractable and severe case of trifacial neuralgia that it has been the province of the author to treat, was the following:—

C. L., aged thirty, machinist, May 9, 1907, had right maxillary sinusitis, right middle turbinate enlarged, infraorbital neuralgia and pressure pain over the right maxilla. Anterior end of lower turbinate was snared off and a part of the maxillary wall removed, and pus drained, with relief of pain. Patient moved to Cleveland in July, 1907, and at that time there was a slight discharge into the right nostril, but no pain in the face. Neuralgia recurred in January, 1909, and a Cleveland rhinologist did a Caldwell-Luc operation. Patient returned a month later, with pus discharging from the antrum. Neuralgic pains were more frequent and severe. The right middle turbinate was boggy, and blocked the olfactory fissure. The ethmoidal cells were curetted and frontonasal duct enlarged. Next day, the flow of pus from the antrum had stopped, which confirmed the suspicion that the pus was coming from higher up in the nose. The olfactory fissure was plugged with the enlarged middle turbinate, so the pus had burrowed through into the antrum. A week later the posterior ethmoidal cells and sphenoidal sinus were operated upon, as they also were diseased. The sphenoidal sinus and antrum healed, but the frontal sinus and ethmoidal cells continued to discharge slightly, the patient having occasional attacks of supra- and infraorbital neuralgia, until February 28, 1913. At that time the neuralgia became more severe, and an injection of fifty per cent. alcohol was used, to reach the second and third divisions of the fifth nerve as they leave the foramen rotundum and foramen ovale. This relieved the neuralgia until April 23, 1913, when the pus from the frontal sinus became profuse and the neuralgia again returned.

A modified Killian operation was done, and in time the frontal and ethmoidal sinuses were cured and the neuralgia ceased.

DISCUSSION.

Dr. C. H. Henninger, Pittsburgh: The branches of the trifacial nerve are frequently involved or damaged by diseased processes in the nasal, buccal and pharyngeal cavities. Their course through bony channels subject them to inflammatory pressure and injury by fracture of the bones through which they pass. Dr. Jobson's paper deals with but one form of disease of the trifacial nerve, trifacial neuralgia from nasal and accessory sinus disease. There can be no difference of opinion in regard to the necessity of treatment of disease that involves any of the branches, and Dr. Jobson is to be commended for the results obtained in the cases reported.

In my cases I have not been so fortunate in finding or removing the cause and have been compelled to use alcoholic injections into the nerve to give the patients relief.

I believe a great deal of confusion has resulted from the fact that it is not always possible to make a differential diagnosis between tic douloureux and symptomatic trifacial neuralgia. The character and duration of the pain, its relation to peripheral irritation, should help to make the diagnosis. The tendency to remissions or complete recession of the disease must be kept in mind when considering the results of our treatment. It is possible that local inflammatory conditions may so injure the trifacial nerve that true neuralgia may develop later, the result of constitutional or toxic states.

Dr. J. F. Culp, Harrisburg: I have been much impressed by the detailed description of the clinical cases in this most excellent paper and am reminded of an unusual case occurring in my own practice. A year or more ago a woman of sixty-five or over came to the Harrisburg Hospital complaining of severe neuralgia in the left side of the face and head. This pain had begun several years before and was increasing in intensity. Practically all the teeth on this side of the jaws had been extracted but without relief. She also complained of severe dull headache at times, which was separate and distinct from the neuralgia. There had been for a year or more an almost constant free watery discharge from the left nostril. When this discharge lessened or temporarily stopped, the headaches became worse. An examination of the upper respiratory tract showed a sharp spur of the nasal septum high up and far back in the left nostril. There was a slight discharge of a clear watery fluid from the left ethmoidal region. The nasal structures appear normal, however, with exception of the sharp spur abovementioned which impinged on the posterior portion of the left middle turbinate. The patient was told that removal of this spur might relieve her neuralgia and she readily gave her consent. Being especially busy at this time she was told to return a few days later. About a week after this a physician, practicing in the country where the woman lived, reported her death from meningitis which occurred less than a week after she had come to the hospital. It appears that the nasal discharge steadily grew less after I had seen her and the headaches steadily grew worse. She finally developed chills, fever (temperature 105°) and lapsed into a condition of unconsciousness. I am at a loss to account for this nasal discharge which appeared to be from a leakage through the cribiform plate. Fortunately no operation was done; otherwise this would have been given the credit for the fatal result which occurred.

Dr. Joseph C. Beck, Chicago: I have not been successful in the relief of trifacial neuralgia by nasal operation, and wish to call attention to the sphenopalatine ganglion involvement and the treatment of the ganglion. Vacuum in the sinuses should be remembered.

Dr. Jobson, closing: Dr. Beck's remarks lead me to believe that I have been fortunate in the curability of the patients having neuralgia who consulted me. An instructive point to which he referred is the symptom complex of involvement of the sphenopalatine ganglion. Dr. Sluder was the first to call attention to retraction of the soft palate on the same side as the affected ganglion, and deviation of the velum to the opposite side. The pain beginning at the side of the nose on the same side as the diseased ganglion, and gradually extending backward, may involve successively the side of the face below the zygoma, the ear, mastoid, neck and arm. Sluder and Holmes have treated cases successfully by injecting alcohol into the sphenopalatine ganglion.

"Flies in the dining-room usually precede nurses in the sick room."

REPORTS OF CASES OF FOREIGN BODIES WITHIN THE EYEBALL AND IN THE ORBIT.

BY JOHN CRAIG MC ALLISTER, M.D.,
Ridgway.

(Read before the Section on Eye, Ear, Nose and Throat Diseases, Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

Case 1. Some dozen or fifteen years ago a physician friend sent me a patient who had had, for a number of years, a piece of steel in one of his eyes. The eyeball was blind, soft and tender and had the characteristic look of a diseased eyeball. I advised its removal. This advice was not accepted and the patient went to a distant city where the steel was removed by a magnet and the eyeball saved.

The use of the magnet at that time was not nearly so general as it is at present, but I have always felt that the outcome of the case discredited my judgment as to the propriety of enucleation. If I had a similar case now I believe that I would suggest the removal of the steel and wait for developments. However, it is still a question with me if a man with a hopelessly blind eye that is somewhat softened and tender is not better off without it.

The following case does not come strictly under the title of this paper, but as it touches upon a condition similar to a case to be related later, I wish permission to include it.

Case 2. A bright boy of four years was brought to me with a commencing sympathetic iridocyclitis in his good eye, the other eye having been blinded by a cut in the ciliary region some four or five months previously. The pupil of the sympathizing eye could still be moderately dilated with atropin. I advised immediate enucleation of the injured eye, and this advice was accepted. The patient was put on mercury and the salicylates and atropin locally, but the eye gradually grew worse, the exudate into the pupillary space becoming more dense with ultimate complete blindness. The parents stated to me that the physician to whom the child had been taken at the time of the injury, had told them that if no sympathetic trouble started within two or three months the danger would be over. The parents may have misunderstood the physician, as we all know how our own statements come back to us almost beyond recognition.

Case 3. Patient was struck in center of cornea by a chip of steel which passed through pupillary space causing traumatic cataract. The steel was removed from the eyeball by use of magnet by an oculist in a distant city. The patient came to me some two or three weeks after the accident had happened, the eyeball being intensly congested and having a tension of about +3, as determined by finger palpation. The pupil was greatly dilated, the iris being a mere ring of substance. I advised a general anesthetic, opening of the anterior chamber, and washing out of the lens substance. I found the control of the iris at the time of the operation very difficult and some of it became engaged in the wound. Otherwise he did very well for a few weeks, when he came back complaining of poor vision in the uninjured eye. An examination of this eye showed a slight pericorneal injection with deposits on posterior surface of cornea, and the general appearance of a commencing cyclitis. The memory of the previous case being in mind and dreading a similar result, I referred the patient to another oculist for advice. The consultant advised immediate enucleation; this I did and placed the patient on energetic treatment for the cyclitis, and am pleased to report that the man recovered with but little damage to his eye. The treatment consisted of atropin locally and large doses of sodium salicylate.

Case 4. An Italian track hand came to me some three or four months after having been injured while laying or ballasting track. He had immediately seen a physician who prescribed for the injured man a boric acid solution. My attention was called to a small scar on the upper lid. Upon everting the lid I found at a point on the eyeball corresponding to the scar on the lid, a slight discoloration and elevation of the conjunctiva. Thinking it to be some slight foreign body lying on the sclera and covered by the conjunctiva, I exposed it by a small incision and grasped the substance with a pair of forceps. It was held quite firmly by the sclera and it became necessary to enlarge the scleral wound somewhat with a narrow scalpel, when by traction a splinter of steel, seven eighths of an inch in length, was removed. This he had carried in the eyeball for some three or four months and while the eye was blinded it was comparatively quiet.

Case 5. This, too, was an Italian, who came with a blind eye some months after having been injured while laying track. He wanted his vision restored. He too showed a scar in the upper lid and a corresponding one in the sclera. The *x*-ray showed a piece of steel, five or six millimeters in length, lying at the upper part of the eyeball. An incision in the sclera over the steel and use of magnet removed the substance but there was no return of vision. This patient inferred from statements made at the time of the accident that his vision would eventually be all right and was badly disappointed that his blindness did not disappear. A radiograph at the time of the accident would have cleared up the prognosis greatly.

Case 6. A boy of four or five with other children was playing with dynamite caps near a blacksmith's forge when a cap was thrown into the fire with a resultant explosion. A very small fragment of copper, less than one fourth millimeter in diameter, pierced the sclera and rested just external to the lens and could be seen through the dilated pupil. I advised with Dr. Heckel concerning its management. He advised an attempt at removal with a small pair of forceps through a scleral incision. The attempt was made and the copper was either extracted or changed position, as we could not find it after the operation. The copper and end of the forceps could be seen through the pupil. The wound healed kindly, but the child passed from observation soon after so that the final result could not be ascertained.

Case 7. This patient came to me several weeks after his injury, on account of the loss of vision and tenderness of one eye. He had been struck by a piece of steel which entered the eyeball. The oculist whom he consulted believed that the steel had not entered the eyeball, and did not think a radiograph necessary. However, the eye did not do well and a radiograph was later taken, showing the steel within the eyeball. An attempt by a city oculist to remove the steel by magnet failed. A second attempt by another oculist succeeded, but the eye remained blind and somewhat troublesome. This case assumed a medicolegal aspect, inasmuch as the oculist to whom the patient first went had an appointment from the company for whom the patient was working, and the patient demanded damages for the reason that the steel was allowed to remain in the eyeball.

Case 8. This workman was struck at about the center of the lower lid by a piece of steel about three millimeters long. A radiograph was taken within a few hours, when it was found that the steel had passed entirely through the eyeball and was lying just posterior to it. No attempt was made to remove the steel, hoping that it might become encysted. The wound in the sclera, just below the cornea, at first showed a tendency to heal, but in three or four days commenced to redden and gap, showing infection. When I removed the eyeball, the piece of steel came with it, lying on the posterior surface of the ball. The sclera had commenced to blacken from the infective process at that point.

Case 9. This patient was struck by a small piece of steel near the sclerocorneal junction at outer side of eye, passing through the eyeball to the nasal side of the orbit. The radiograph showed the metal to be in the soft tissue of the orbit. An attempt to replace the iris was a partial failure, even after having excised part of it. The patient and his friends became dissatisfied because I refused to make any positive statement as to what the ultimate results would be, and he went elsewhere and had the eyeball enucleated, the oculist enucleating, as I understand, on account of the danger of sympathetic trouble due to the incarcerated iris. The enucleation was done a week or so after the accident, the eyeball showing no evidence of infection.

Case 10. While removing a shoe from a horse, a piece of steel struck the patient on the lower lid below the eyeball, penetrating the soft tissue of the orbit. The patient was seen several hours after the accident and a radiograph taken which showed the metal below and behind the posterior pole of the eyeball. The original wound was slightly enlarged to permit the entrance of the magnet tip when the steel was extracted. I relate this case to show the importance of a magnet tip that can be used in any direction and independently of the fixed tip attached to the magnet.

The above cases have been selected, each showing a little different phase of accident. There were two cases of sympathetic inflammation, one gradually going on to permanent blindness after enucleation, and the other to recovery.

In three cases, the foreign body passed through the eyelids. In one case the wound was infected, in the other two it was not infected. I am impressed that there is more danger of infection where the foreign body passes through the skin than where it does not.

In all my cases there has been total blindness when the patient came for consultation, and in no case has there been a restoration of vision.

One case illustrates the importance of a very careful physical inspection. One case illustrates the importance of a guarded prognosis. Three cases in particular show the importance of the immediate use of the radiograph when there is a shadow of doubt as to whether or not the foreign body is within the eyeball. In three of the cases the foreign body was in the soft tissues of the orbit. In the two cases in which the foreign body passed through the eyeball, the eyeballs were removed, one by myself on account of infection, and the other by another member of this section on account of the possibility of sympathetic trouble.

Case 2 would show that the cases complicated with traumatic cataract must be kept under observation until the cataract has been satisfactorily terminated. In the case mentioned I feel that if the operation for the cataract had been done at the first rise of tension, the result might have been different.

I have found the radiograph to be an indispensable diagnostic measure, having been able to locate the foreign body with reasonable accuracy in each instance.

For magnetic extraction I have used the medium-sized Victor magnet, not having the larger size at my disposal. Owing to the difficulty of moving either the magnet or the patient's head with precision, I had a handle of non-magnetizable metal attached to the curved tip that came with the magnet and have found it a very practical addition to the magnet equipment. In using the magnet, it is desirable to approach the magnet close to the field of operation, using as large a tip as is consistent with the work, and to use a tip that is easily controlled. I believe that the tip which I show you is a practical one.

DISCUSSION.

Dr. William W. Blair, Pittsburgh: A careful review of Dr. McAllister's cases suggests several phases of the subject which might be very profitably discussed. Of first importance is the question of diagnosis, and here I think we must all agree in the absolute necessity of reliable *x*-ray plates being made in all cases, where there is any possibility of an injured eye harboring a foreign body of any kind. This possibility frequently exists, and is always to be thought of in every case of penetrating injury; though, as we are all aware, the history of the injury, as given by the patient or his friends, often seems to make such a condition improbable.

While I am much impressed with the work of Haab and his followers, I can not agree that the use of the giant magnet, even in the most skillful hands, can ever render results comparable with that method which not only demonstrates the presence or absence of a foreign body within the eye, or the orbit, but which localizes the same when present, thus offering the operator the choice of route of extraction, *i. e.*, through the wound of entry, or, by a shorter route, through a surgical incision.

The writer's case No. 8 calls to mind a similar one occurring in my own practice in January, 1911, where a man working at a lathe received an injury of his left eye, which was properly suspected to be due to a flying particle of steel. When I saw the case in consultation, repeated efforts with the magnet had failed to elicit any response, and the decision to enucleate the eye had been reached. An *x*-ray shadowgraph showed a particle, roughly one millimeter by four millimeters, to be lying in the orbit above and back of the globe. The man was put in the hospital on rigid treatment, no effort being made to disturb the foreign body, with the result that the eye soon became quiet; the cataractous lens was subsequently removed, and the man now has a clear pupil, and his vision equals

6/18 with correction. A subsequently made x-ray plate showed the foreign body to be still in the same position in the orbit.

The point upon which I would place particular stress is that when the operator is furnished with a reliable x-ray plate, which gives him at once the size and the location of the foreign body, as well as its position with regard to its long and short diameters, he is then, and only then, in a position rightly to choose his magnet and his method of delivery.

This then introduces a second matter for careful consideration, and that is the choice of magnet to be employed: whether it be the small hand magnet of Hirschberg, the giant magnet of Haab, or the one which falls between, *i. e.*, that of Sweet, or a modification thereof. Haab's magnet has not been much in vogue in this country, and I am inclined to believe that this is largely so for the reason that the Haab magnet is of avail only when used exactly as Professor Haab has directed, and when used carelessly, and without definite method, it is capable of causing irreparable damage. Prof. Haab himself is most emphatic on this point. From personal observation I do not hesitate to say that the Haab procedure, when successfully carried out, is one of the most satisfactory I have ever seen; but I repeat that the method in every detail must be scrupulously observed. For small particles it is the method *par excellence*, fulfilling as it does every theoretical requirement for the correct surgical procedure.

Here again however the x-ray enters into the calculation, for I do not think it justifiable to subject the eye to the dangers incident to the removal of what might prove to be a large fragment of metal, without first ascertaining the exact size and location of the piece. My own opinion is that, in a complete armamentarium, there is a place for all three of the commonly used magnets, and the selection of the one best adapted to any particular case requires very careful consideration.

As to sympathetic ophthalmitis, individual experiences differ. I have talked with an ophthalmologist of thirty-five years' experience, who told me he had never seen a case; others have seen but few, while there are those who think we see it much too frequently.

Naturally where the only sure prophylaxis is by recourse to the mutilating operation of enucleation, which every ophthalmologist shrinks from, individual judgments will sometimes go wrong and disaster is the sequel, and, to one who has taken the conservative side, a single experience, in which he has judged wrongly, and has seen a sound useful eye follow in the wake of a damaged blind one into darkness, will convince him that the radical attitude is safest.

Where an injured eye is sightless and refuses to become quiet and white after some weeks of treatment, or where a foreign body is retained and can not be extracted, the decision is easy, but when we have to do with a damaged eye, which still retains some vision, but which at the same time still remains red, tender and shows a tendency to low tension, we must stop and consider, though, here too, I think radical measures are best in the long run.

I may be pardoned for here briefly relating the history of a case of well-established sympathetic ophthalmitis, in which the patient recovered full normal vision in the sympathizing eye, after treatment which will be described. On January 19, 1911, J. L., a stationary engineer, aged twenty-nine, was struck in the left eye by a flying fragment of glass from a water gauge which had burst, his face being but a few inches from the gauge when it broke. When brought to my office, three weeks later, the man appeared to be totally blind, having to be led by the hand in order to move about. The left eye showed a linear scar across the cornea, slightly below the center and extending beyond the limbus into the ciliary region at either end. The iris was prolapsed through the wound at the outer end, and was caught in the same at the inner; the pupil was very small and filled with exudate; the eye was very tender, red and painful; careful tests in the dark room showed faint light perception, but no projection. The right eye showed deep ciliary injection, the pupil was irregular and about three millimeters in diameter; the cornea showed a number of small dots on its posterior surface below the center; with the ophthalmoscope a red reflex could be made out, but no details of the ocular fundus could be seen; the aqueous humor was cloudy; vision equaled hand movements only, fingers could not be counted. The patient stated that his right eye had been good until three days previous, so that the date of the onset of his trouble would have been about eighteen days.

A diagnosis of sympathetic ophthalmitis was concurred in by a number of my colleagues, who saw the man later in the day at the hospital.

Enucleation of the sightless injured eye was performed the next morning about 8 o'clock, and later in the day the following treatment was instituted: Atropin and dionin were instilled into the conjunctival sac, the former in a strength of eight grains to the ounce of water, and repeated every three hours, and of the latter a five per cent. solution was used twice daily; leeches were applied to the right temple; sodium salicylate in increasing doses was given, so that by the fifth day 150 grains were being taken in the twenty-four hours. A sweat in a cabinet bath was ordered for each day; hot fomentations to the right eye for twenty minutes at a time, and repeated every three hours.

On the ninth day in the hospital, the pupil showed a beginning dilation, and the anterior chamber had cleared slightly. From this time forward there was a steady improvement, so that at the end of four weeks the man left the hospital with a clear round pupil and a slightly hazy vitreous, but with vision of 6/12. Two months later the vision had improved to full 6/6 with +0.75 spherical correction.

This is the only case of sympathetic ophthalmitis in which I have seen treatment followed by the recovery of useful vision. I think those who followed the case with me felt that the use of sodium salicylate after Gifford's plan (*i. e.* up to toleration) was the important feature of the treatment.

Dr. S. D. Risley, Philadelphia: Increasing experience in the treatment of sympathetic irritation or inflammation and of foreign bodies in the anterior chamber has modified our early optimism. Enucleation of the injured eye or the successful removal of a foreign body with the magnet by no means always insures the safety of the fellow eye or that vision in the injured eye will be saved by removal of foreign body. Much depends on the technic employed. The long tip of a magnet should never be introduced into the vitreous chamber but the conical tip applied to the scleral wound made by the surgeon contiguous to the known locality of the foreign body. The general condition of the patient should be considered since general conditions may be the determining factor in destructive inflammations in the uveal tract.

Dr. Edward Stieren, Pittsburgh: I wish to indorse the axiom just given that it is as essential to have a radiogram made of every case of this nature as it is to make even an inspection of the eye. To attempt to remove a foreign body from the eye or orbit without first knowing exactly where it is lodged is little less than criminal. Although the history of the accident and the wound of entrance both give us valuable information, neither is convincing that a foreign body really has entered the eye and the *x*-ray must be used as a routine measure in all such cases. Last June I had occasion to look up our records in the South Side Hospital and found that in eighteen months 130 cases had been radiographed and foreign bodies located in 16, about one in eight. In eighteen years the *x*-ray has located 220 foreign bodies for me in the eye or in the orbit and if this proportion is carried out it would mean that no less than 1760 exposures had been made. These statistics may appear burdensome but are given to emphasize what has just been said and what I have always insisted upon that every case should be radiographed and the location of the foreign body plotted.

I wish to take this opportunity of correcting a statement made here Tuesday afternoon in connection with the case exhibited by Dr. Willetts. It was asserted that the *x*-rays fail in locating glass. This is not the case, for if the glass contains only a small proportion of lead it will throw a shadow. This is beautifully shown in the case of Claiborne where a small spicule of glass from a vial passed almost through the crystalline lens and was accurately located by the *x*-ray.

In regard to traumatic cataracts, I long ago gave up the notion of allowing them to undergo the slow process of absorption but proceed immediately to a corneal section and evacuation of the lens matter as completely as the circumstances of the injury permit. Experience has taught me that thick pupillary membranes are only too prone to occur when the method of needling or spontaneous absorption is relied upon. Not only is it difficult to make a suitable opening in such a membrane but the formation of posterior synechiæ is almost sure to occur with smouldering iritis and cyclitis for weeks afterwards. The eye usually has a much better chance to recover if the anterior chamber is emptied at once.

Dr. William M. Sweet, Philadelphia: I am in accord with the line of treatment outlined by Dr. Heckel for foreign bodies in the eyeball. I believe that, with the more general recognition of the importance of the early diagnosis and extraction of foreign bodies from the interior of the eyeball, the percentage of loss of the eye will be considerably reduced. The statistics of a large series of cases during the last few years show that fully one third of all eyes in which a foreign body has penetrated into the vitreous chamber, and lodged in the retina or choroid, are lost. Many of these lost eyes might have been saved had prompt removal of the steel been attempted. In a certain proportion of cases immediate extraction of the foreign body will not succeed in saving the eye, the effect of the concussion of large pieces of iron or steel and the traumatism of the extraction ultimately resulting in low grade inflammation and often shrinking of the globe. It is unfortunate that many cases of injury from foreign bodies, which occur at points remote from the larger cities, are not promptly and scientifically examined for the possible lodgment of a foreign body in the eyeball. Local measures are employed for a long period, and it is only when these fail to quiet the inflammation that the patient is referred to one of the larger clinics for *x*-ray examination. With the time that has elapsed since the injury the metal is often so covered with firm exudation that extraction with even the most powerful magnet is not only difficult but often impossible.

I believe that, in every instance of injury with a perforating wound of the cornea or sclera, an *x*-ray examination should be insisted upon. The radiographs not only indicate the size of the foreign body, but also its position in the eyeball. Even if the wound is still open, the magnet should not be employed until radiographs indicate the position and size of the body. A long thin foreign body may make only a small wound in its passage into the interior of the eye, and it is important for the operator to know the position of the ends of the metal before the magnet is applied.

The ability to secure by the roentgen rays a shadow of glass in the eyeball depends on the size of the particle and its situation. In all instances of injury from glass several sets of radiographs should be made with the tube in different positions, so that all portions of the anterior half of the globe will be shadowed on the plate free from the dense shadow of the external orbital bony wall. By this method even small particles of glass may be shown. The tendency of glass to splinter, however, makes it impossible for the x-ray operator, even if successful in shadowing one or more particles in the eye, to state positively that the eye does not contain other fragments which may be so thin, and so situated that the thinnest edge is towards the tube, as not to be shown by the radiographs.

THROMBOSIS OF LATERAL SINUS WITH REPORT OF FOUR CASES.

BY JOHN R. SIMPSON, M.D.,
Pittsburgh.

(Read before the Section on Eye, Ear, Nose and Throat Diseases, Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Since the subject for this paper was selected, I have had a patient with thrombosis of the jugular bulb and inferior petrosal sinus associated with diffuse suppurative meningitis. This case more properly belongs in the meningitis group, but I may be pardoned for including it in this series for the reason that it illustrates an interesting point in connection with injury to the lateral sinus. This report, therefore, includes four cases instead of three.

Case 1. A. A., Italian, male, aged thirty-eight years, was admitted to the service of Dr. Arbuthnot, Western Pennsylvania Hospital, December 21, 1910. Diagnosis was lobar pneumonia.

January 1, 1911, he complained of right ear being stuffed up, and dullness of hearing. Drum was reddened. January 12, patient complained of pain in ear. There was redness and bulging of drum and some tenderness over mastoid antrum. Myringotomy was done. On January 14, there was marked mastoid tenderness. Drum was again opened. On January 15, mastoid tenderness had decreased. Pain and discharge persisted. On January 27, distinct postaural swelling was noticed. Blood culture was negative. On the next day, swelling had increased. Patient was transferred to the service of Dr. Day and prepared for mastoid operation.

January 29, simple mastoid operation was done under ether. The pneumatic structure of the mastoid process had broken down, and the cavity was filled with pus. The sinus lay bare, covered with granulations, and seemed hard when touched. A crossed incision was made, and the exposure of the sinus was extended. The mastoid cavity was cleaned out, wound douched with salt solution, sinus opened, and found filled with organized clot. Flow from torcular end obtained about one half an inch beyond knee of sinus. Gentle curetting in bulbar end brought no return flow. Thrombus, except bulb portion, was removed, sinus wall was cut away, wound packed with iodoform gauze and patient returned to bed.

On the following day, with the able assistance of Dr. Edith Waldie, the jugular vein was exposed, found distended, ligated, resected, stumps touched with carbolic acid, wound closed, except small space at lower end of incision for insertion of silkworm gut drain. Further attempt was made to increase the exposure of the jugular bulb. The curet was again inserted into the lower end of the sinus, no flow being obtained. Fluid obtained by lumbar puncture, while on table, was reported negative.

Postoperative: The mastoid wound healed solidly without interruption. A rather extensive cellulitis of the neck developed from jugular wound, which responded to stock and autogenous vaccines. Another blood culture, taken on February 16, was reported negative.

Case 2. J.S., Italian, male, aged twenty-five years, admitted to the Eye and Ear Hospital, in the service of Dr. Day, on June 30, 1913, gave history of discharging ear (left) since operation fifteen years before. On examination, there was found a profuse, thick, foul, discharge from the left ear; a sinus extending into the mastoid cavity; old mastoid incision scar, and redness and swelling of the tissues over the mastoid.

The day after admission the mastoid was opened under ether. Mastoid process was found excavated and almost entirely filled with a cholesteatoma which extended into and filled middle-ear cavity. Sinus was found exposed, and showed some suspicious black areas. Surrounding bone was sclerotic. An attempt was made to increase exposure of sinus after making the crossed incision. While uncovering the sinus just beyond the knee with Kerrison forceps, I was unfortunate enough to rupture the sinus wall. As this part of the sinus was not occluded, the bleeding was so profuse that it was necessary to abandon further operative procedure.

Operation was resumed the following day. It consisted of a radical mastoid, an extension of the sinus exposure, the finding of a thrombosed sinus extending from a little below the knee to the bulb. Thrombus was removed, no return flow from bulb end being obtained. The jugular was not ligated or resected. The dura anterior to sinus was necrotic.

Postoperative course: Pus developed in bulb. A rather extensive cellulitis of neck developed. Dura in front of sinus sloughed. Patient showed evidence of profound sepsis.

Patient died July 28. Autopsy was performed by Professor Klotz one hour after death. I quote the following from the autopsy record:—

"The dura appeared quite healthy on its inner and outer surfaces, save in the vicinity of the left mastoid process. The superior and inferior longitudinal sinuses were patent and without change. The cavernous and petrosal sinuses of both sides were patent and without change. The left lateral sinus was completely occluded. In it there was found a thrombus which extended from the point of operation at the left mastoid to the torcular herophili and also to a slight extent into the straight sinus. This thrombus was of a mixed variety, the part adherent to the wall being grayish yellow and rather gelatinous, while the more central portion was of a firm, brittle and dark red character. This thrombus was firmly adherent on all sides, throughout its extent. From the left mastoid process inwards towards the jugular foramen the sinus was completely occluded but the occluding thrombus was undergoing softening, and just at the jugular foramen there was a yellow purulent exudate present. This necrotic softening of the sinus extended some distance into the jugular vein. The right lateral sinus was quite free and healthy."

Notandum: "Although there was an extensive infective thrombosis of the left lateral sinus, there was no infection of the meninges. Death was probably due to septicemia as there was not sufficient visible disturbance about the head to produce death."

Case 3. Mrs. M., aged thirty-five, was seen with Dr. Cross at Curtisville, Pa., January 6, 1914. Patient was convalescing from measles. Right ear had troubled her for two and one half weeks mastoid tenderness was noticed by her physician for one week. There was a profuse purulent discharge from the ear and the patient complained of intense pain. She had a chill lasting ten minutes the morning of the day I saw her. Temperature had been registered at 105° and 104°F. Patient presented, in addition, pulmonary tuberculosis and chronic disease of the heart and kidneys. Examination revealed distinct tenderness over the entire mastoid with some edema and a profuse discharge from the ear.

Dr. Cross and I agreed that an operation was imperative but that general anesthesia was decidedly contraindicated. We, therefore, proceeded to do a mastoid operation under cocain anesthesia. Cortex was thick, the cellular structure was necrotic, and considerable pus was found in the mastoid cavity. Sinus was placed well forward. Inner table was necrotic and absent at one point, exposing a sinus which was covered with granulations, hard to the touch, and gave a distinct pulsation. Crossed incision was made; sinus was uncovered about one inch beyond knee and downwards towards bulb, opened with scalpel, and found filled with thrombotic clot. A return flow was obtained from the torcular end, none from the bulbar end. Thrombus was removed and sinus wall cut away, wound dry cleaned, touched with tincture of iodin and packed. The jugular was not ligated at this time.

Postoperative: Patient had a daily chill, distinct fluctuations of temperature, and some vomiting. Three days after the operation I again went to see her and Dr. Cross and I ligated the jugular vein under cocain anesthesia. From that day recovery was uninterrupted, patient getting out of bed in six days.

Case 4. D. C. C., aged fifty-six years, admitted to the service of Dr. Day, Eye and Ear Hospital, June 6, 1914, gave history of pain in right ear with discharge of three days' duration, intense, headache, nausea and vomiting. He had entirely recovered two months previously from a double acute suppurative otitis media, for which he had been treated in the outpatient department.

On examination, he was found to have a very tender mastoid; there was some pus in the canal of the ear and a perforation of the drum in posterior part. Patient seemed prostrated. The perforation in the drum was enlarged and patient put to bed.

On June 8, I did a simple mastoid operation. The cortex was found thick, the mastoid structure was of the diploetic type, containing a few scattered cells which had within them a purulent collection. Antrum was located with considerable difficulty. Sinus was accidentally wounded while cleaning out the tip cell. Bleeding was controlled without difficulty. Several blood counts showed the following results:—

June 7...15,000 leukocytes
June 8...16,200 leukocytes 80% polymorphonuclears
June 10..17,600 leukocytes 78% polymorphonuclears
June 13..17,000 leukocytes 84% polymorphonuclears

June 11, lumbar puncture performed and fluid examined by Dr. Willetts and reported as follows: Turbid, 15 c.c.; many pus cells and great many bacteria, chiefly gram positive cocci and some short chains; also many gram negative bacilli that resembled influenza bacilli; cultures on blood serum and blood agar gave no growth.

June 14, blood culture by Drs. Willetts and Baker showed a luxurious growth of gram positive cocci in pairs and chains (streptococcus). June 13, eye grounds were found negative by Dr. Stanley Smith. Repeated urine examinations were negative. Patient was given ten grains of urotropin every three hours for several days. He had several chills and complained of pain in right hand and right shoulder.

Death occurred July 16, 1914. Autopsy was performed, three hours after death, by Dr. M. H. Baker whose report is as follows:—

"Diffuse purulent meningitis, almost entirely confined to the base; considerable quantity of exudate being found anterior to the medulla and in the cerebellar region. Infective thrombosis of right inferior petrosal sinus and a soft, friable thrombus extending from bulb a short distance into the jugular vein. All other sinuses were patent. There was a purulent exudate in the middle ear and canal, otherwise, structures were without change. Labyrinth intact and without change. Cultures from meninges and thrombosed sinus showed streptococcus."

Death was undoubtedly due to meningitis. I believe the thrombosis to have been caused by the injury to the lateral sinus.

This case is mentioned to show the danger of opening a sinus in an infected field. Of course the mastoid cavity had not been properly prepared and the opening made in the sinus was so large that it was impossible to prevent a continuous capillary drainage of septic matter into the blood stream through the opening in the sinus wall. An experience such as this should not deter one, however, from properly cleansing the mastoid cavity and opening the sinus if there is reason to suspect a thrombus is present.

It is interesting to note the absence of a thrombus in the left inferior petrosal in Case 2, in which there was pus in the bulb, and the presence of a thrombus in Case 4, in which the bulb seemed to be only partially thrombosed.

The principal fact apparent in this group of cases, is the one which we find in reading the literature, that most diagnoses of sinus thrombosis are made while the mastoid operation is in progress. Even then, it sometimes happens, when we have the sinus exposed before our very eyes, that we are in doubt as to whether or not there is a thrombus within.

The physician, who makes use of every aid at his command in the investigation of every ear case showing some constitutional disturbance, will be the one most likely to recognize the condition early enough to operate and save the life of his patient. Crockett, in a brilliant series of recoveries, has demonstrated the importance of early recognition and early surgical intervention.

In closing. I should like to say that I do not believe we should attach too much importance to any one aid in diagnosis. Sheppard, in a recent paper before the Triological Society, has shown that too much reliance should not be placed on the blood culture in determining the indications for or against operation, therefore detracting, in a measure, from the importance given to the positive blood culture by Libman. It is well to consider the general condition of the patient. Let there be a careful record of the temperature every two or three hours, so as to detect the frequent fluctuations that may be taking place. Let us be on our guard for any evidence of sepsis, such as chills, chilly sensations, sweating, etc. Let there be a differential and total leukocyte count made at least every other day. Let us have blood cultures sufficiently often, says Sheppard, to have a definite knowledge of the persistence of the organism in the blood, and whether or not the patient is in need of assistance in taking care of the bacteremia. Let us be on the lookout for metastases. Let these measures form the basis of our investigation, and if we still crave for more work to do, we may resort to some of the niceties of diagnostic technic which play their part in completing the picture of a condition which, when recognized early, and promptly dealt with surgically, usually terminates favorably.

I am indebted to Dr. E. W. Day for the privilege of operating on and reporting three of these four cases.

DISCUSSION.

Dr. John C. Beck, Chicago: I believe that chills are most important in connection with high temperatures and ear suppuration. Increase of the blood clotting time is important. Exposure and exploration of sinus should be encouraged when sinus thrombosis is suspected.

Dr. G. B. Jobson, Franklin: Absence of ocular symptoms does not justify the exclusion of intracranial involvement but when present and considered in conjunction with other symptoms, is a valuable guide to a timely operation. Choked disc and optic neuritis, which by some are used interchangeably, are the earliest and most important ophthalmic evidence of intracranial involvement. Choked disc is nearly always bilateral, but in occasional cases it is unilateral, and seen on the same side as the thrombotic sinus. Roemer states that pathologic changes are present in the fundus, in two thirds of the cases of sinus thrombosis. Choked disc may indicate meningitis, extradural or brain abscess. These are to be excluded, by the difference in symptoms.

Exophthalmos, in the presence of lateral sinus thrombosis, means cavernous sinus involvement.

TO AVOID BREAKING AN ARM.

Many a broken arm and worse would have happened had not the following advice of George A. Hows, the founder of the famous Panhard oil business, been followed: When cranking, place the thumb against the index finger and take the handle between the four fingers and the palm of the hand. The hand, thus opens readily should a back-kick occur. Always crank up: never down.—*Motor Print.*

REPORT OF THE COMMISSION ON THE CONSERVATION OF VISION.

BY WILLIAM CAMPBELL POSEY, M.D.,
Chairman of the Commission, Philadelphia.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The activities of the commission during the past year have been devoted largely to coöperating with the State Department of Health in devising and perfecting ways and means to prevent and treat ophthalmia neonatorum and trachoma. Both of these affections are now classed among the reportable communicable diseases and the commission is operating with Dr. Dixon and his officers not only as to the best means of securing reports of all cases as soon as they come under the care of practitioners throughout the state, but also for their prompt and efficient treatment. To further their purposes, the commission urges all practitioners to aid the department by reporting all cases of ophthalmia neonatorum and trachoma promptly, and offers the services of an organized corps of ophthalmologists to administer proper and free treatment to all cases in which ophthalmic aid is beyond the means of those affected. This volunteer corps 134 in number has been recruited from the ophthalmic surgeons of the state and has representatives in nearly every county. As its personnel is unlimited in number and it is the desire of the Department of Health that it should include all skilled ophthalmologists who wish to proffer their services, it is hoped that any competent ophthalmic surgeons who may have been overlooked in its formation will advise the secretary of the commission, so that they may be enrolled in its membership. It is planned that if Dr. A., for example, encounters a case of ophthalmia neonatorum or trachoma in his practice, immediately following its report to his county health officer, this latter will immediately notify Dr. X., the nearest member of the ophthalmic corps in point of residence, who will promptly visit the patient, and, either alone or in conjunction with Dr. A., administer proper treatment until the patient is cured.

The commission is also endeavoring to open the wards of general hospitals to infants with ophthalmia neonatorum and to the mothers of infants afflicted with this disease as well whenever it seems undesirable to separate the parent from her offspring. All of the hospitals in Philadelphia and some one hundred and five hospitals in the state have been petitioned to comply with this request.

There is reason to suppose that in certain districts, in any event, trachoma is increasing throughout the state. During the past year, for example, thirty-five cases of the disease were discovered at Farrell, Mercer County, twenty-five at Duquesne; twenty in the Pittsburgh city mills; and a few cases were reported at Greenville. At the request of Dr. Dixon the commission gave such aid as its means afforded, but the combat of this epidemic was borne largely by the local authorities. While it is likely that the new Housing Commission, which the Department of Health is putting into operation, will do much to prevent the spread of the disease by obtaining better hygienic conditions among the foreign population, it seems desirable, if not imperative, that some provision should be made to isolate and treat such cases, as in-patients in hospital wards. The commission has urged the health officer to recommend the construction of hospitals especially devoted to the treatment of trachoma cases in regions where the disease is common, and the Legislature will be requested to make an appropriation for this purpose.

To popularize the work of the commission and to gain the interest and support of the laity, the commission has organized a society comprised largely of lay members to coöperate with it, and although, for various reasons, the movement thus far has been confined to Philadelphia, fifty members are already enrolled, each paying annual dues of one dollar. The treasurer of the society, Dr. Holloway, reports a balance of $925.22 in the treasury, this sum having been obtained from the annual dues of members and from private gifts. This money will be expended in furthering the work of the society, in advertising the dangers to sight of certain occupations, in promulgating knowledge concerning the nature of ophthalmia neonatorum, in financing popular lectures in ocular physiology and hygiene, etc. A very creditable illustrated exhibit was made by the commission at the last meeting of this society in Philadelphia.

Thanks to the initiative of one of the members of the commission, Dr. Reber, printed blanks instructing scholars as to the use and abuse of the eyes were pasted in 80,000 school books used by children in the public schools.[1]

The commission has coöperated with the National Committee on Conservation of Vision appointed by the Ophthalmic Section of the A. M. A. in furthering its interests, and has arranged with its chairman for the delivery of a series of lantern lectures throughout the state on ocular hygiene and such phases of the work of the commission as may be of value and interest to the laity.

The control of optometry having been legally determined to come under the province of the State Board of Medical Education and Licensure, the commission is relieved of further responsibility in this matter, though it pledges its aid to the Legislature and the board just referred to in the event of further contest with the optometrists.

With the organization of the commission effected, with the formation of its advisory board, its coöperating lay society and the corps of volunteer ophthalmologists, with its affiliation with the State Department of Health and the national and state ophthalmic bodies clearly and harmoniously defined, the time is ripe for an active campaign along the many lines of its activities, and actual results should now be obtained in reducing the number of cases of preventable blindness, the chief purpose for which the commission was formed.

In treating pleuritic pain do not forget strapping with adhesive strips. Three inch strips are best, and they should be long enough to extend two inches beyond the median line anteriorly and posteriorly and should overlap by one-third. Apply at the end of respiration, beginning below and strapping upward to the axilla. This is better than codein or painting with tincture of iodin.

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[1] Similar blanks will be pasted in 100,000 additional books during the next six months.

INSANITY AND ITS PRESENT DAY TREATMENT.

By George W. McCafferty, Jr., M.D.,
Waymart.

(Read before the Wayne County Medical Society, Honesdale, October 22, 1914.)

I am sure that this topic, insanity and its modern treatment, must appeal strongly to all of us, general practitioner and specialist alike, as the evidence of mental aberrations, particularly in their initial stages, are more or less commonly met with, and, in curable cases at least, if appreciated in their incipiency, may terminate under proper treatment in recovery of the patient.

Before, however, taking up the strictly modern aspect of mental alienation, it may be of interest to consider briefly a historical résumé of this form of disease.

As might well be imagined, man, in his early historic condition, assumed mental vagaries to be of divine expression. During this period the treatment of the insane was monopolized entirely by the priests. If a beneficent, anthropomorphic god sent rain and sunshine to nurture the harvests, so these early people reasoned, why should not the expressions of a lunatic be occasioned by the residence within this body of an evil god, *id est*, a devil. It is hardly necessary to attempt to depict the treatment of these unfortunate people during this era of unlimited credulity and superstition.

The first bright light, even faintly illuminating this period of darkness, was the Father of Medicine, Hippocrates; himself a priest of the priestly class, having hereditary privileges in the care and treatment of the insane, he abandoned the teachings of his early spiritual advisers and inveighed against the treatment of this class of patients by exorcisms, incantations, sacrifice, etc.

From the writings in general of Hippocrates, it may safely be assumed that he had a fairly accurate and fairly comprehensive conception of insanity. He first established treatment by baths, travel, exercise and other hygienic measures, even to the exhibition of certain drugs which, at the present day, grace our pharmacopeia. To illustrate the thoroughness of his treatment an attempt was made to correct refractive errors by the wearing of spectacles. All honor to Hippocrates. The impetus given by him to the scientific consideration of this subject lasted throughout the periods of development of Greece and Rome. Many names are associated with this period in the appreciation and treatment of the various forms of insanity. These, however, reflect in a greater or less degree the master mind of Hippocrates.

It was during this period that treatment without restraint, and on an essentially humane basis, was instituted. To illustrate this point, the following quotation is taken from Coelius Aurelianus; this physician lived nearly two milleniums ago, but his words speak as truly today as they did during the height of Roman grandeur. To quote, "If the sight of other persons irritate them, and only in very rare cases, restraint by tying may be employed, but with the greatest precautions, without unnecessary force, and after protecting all the joints, and with special care to use only restraining apparatus of soft and delicate texture, since means of repression employed without judgment increase, and may give rise to furor, instead of repressing it."

After the time of Galen little was produced to further advance the knowledge of this field of medicine. With the fall of Rome and the advent of the Middle Ages, this department of human knowledge sank, as did all others, into the oblivion of medievalism. The status of treatment reverted to a degree of ignorance and barbarism rivaling the horrors of the pre-Hippocratic period. It was during this time that we find those wild waves of communal insanity sweeping over Europe.

It is true that ignorance is the mother of insanity. Some of the names of men who achieved distinction during this long period have associated with them the ineradicable taint of insanity. I need hardly recall to your mind the epileptic insanity of Mohammed, the paranoid form of Christopher Columbus and Jeanne d'Arc, while the hallucinosis of Martin Luther is sufficiently well known to need no comment.

During the Dark Ages theology consumed such a large part of the attention and energy of both the aristocracy and the masses that we naturally find their insanities affiliated with this consideration of supernatural causes and events; to illustrate, in 1212 A.D. a French shepherd lad, announcing that he was sent by God to crush the Saracens, shortly was a leader of an army of thirty thousand children of both sexes. He, as might be expected, successfully led his juvenile army to death and the survivors to slavery. This reign of darkness continued down until the renaissance.

With the awakening of the intellectual faculties of Europe, we find the lot of the insane gradually being ameliorated. It was not however until about 1750 that the humanitarian views of the great Hippocrates were again reinaugurated.

Philip Pinel was the first modern physician to advocate treatment along Hippocratic lines. Shortly precedent to the time of Pinel, to quote Régis, "In the large Hospitals in Paris the insane were covered with rags, ill nourished, loaded with chains and collars of iron, confined in infected cells intended for criminals, bedded on rotten straw, breathing a mephitic atmosphere, they dragged out a miserable existence, exposed to the view of the public who, being admitted on holidays, on the payment of a fee, repaired to view the sight and to tease them like wild animals through the bars of their cages." It will thus be seen that from the time of Galen to the time of Pinel approximately a millenium and a half of years, the diagnosis, treatment and care of the insane was of the crudest kind.

The beginning of the nineteenth century ushers in the modern period, so-called.

This brief description of what has gone before may well serve to illustrate the advancement, in this particular, at least, of our present era.

I would like now to say a few words in reference to our modern conception of insanity and allied subjects Insanity is a derangement of the mental functions, and is a symptom of many morbid changes in the brain. Many cerebral diseases do not culminate in insanity. It is only when those parts or centers of the brain are involved, which are associated with the mental functions, that insanity follows. In the greater number of cases of insanity, the mind as a whole is deranged; the intellectual faculties, the will, feelings and organic appetite all being, though often unequally, involved.

The etiological factors of insanity may be assumed to fall under the following headings: First, the insanities due to heredity, such as paranoia, dementia præcox psychosis, manic-depressive psychosis, hysterical psychosis, epileptic psychosis, constitutional psychopathy, constitutional inferiority, imbecility and idiocy. Second, intoxication and infections, such as infective exhaustive psychosis, alcoholic psychosis, drug and other toxic psychoses. Third, pathological, as psychoses with gross brain lesion, traumatic psychoses, senile psychoses, involutional psychosis and paresis. These classes as given are found accurate in the majority of cases, although their boundaries may overlap.

The symptoms of insanity are many and diverse, and may be for convenience classed as follows: General mental disturbance, change in the will power, change in the sensations and instincts and, lastly, in habits.

The first, that of general mental disturbance, may take the form of melancholia, mania, dementia or perversion.

In the group of melancholiacs the patients feel distressed, and they are very unhappy, varying from slight degrees of depression to entire hopelessness, accompanied with suicidal tendencies. In other conditions, more grave delusions of a distressing character are present; the patients complain that they have committed the unpardonable sin, complain that their food is poisoned, that people are trying to kill them, that they are about to be cut up into small pieces and thrown in the river. Possessing the obsession that their food is poisoned, or contaminated, prompts them to refuse food; later aural hallucinations annoy them, God tells them not to eat, they have false ideas of persecution which lead them to have homicidal and suicidal tendencies.

This class of patients may be quiet, sitting as though demented, others may be restless, walk the floor and wring their hands, muttering or crying aloud "Oh, my God, what shall I do," and repeating this sentence over and over again all day long and part of the night.

When the patients become exalted or maniacal, which morbid activity is frequent among those mentally affected, their controlling faculties are impaired; at first they are talkative, then loquacious, followed with garrulity, and lastly they talk so fast that the words refuse to come in regular formation, and they speak a word only here and there, and it appears to the listener as though the words actually jump from their mouths. They become incoherent, not only in language but in acts. They become restless, disturbed, disorderly, noisy; they whistle, and from being impulsive they become violent, destructive in their habits, besides becoming filthy. This condition continuing, the patients may not recognize their surroundings, and make mistakes in the identity of persons, and of themselves. Heat, light and pain bring no response; they become further incoherent in acts and language, restlessly walking the floor and gesticulating, pulling out their hair, denuding themselves, or tearing their clothing. In this class the patients are apparently happy, possessing delusions of grandeur in some of which they imagine that they are wealthy, are owners of gold mines, of all the diamonds in the world; they are world renowned pugilists receiving large sums of money in the ring, or that they can manufacture an automobile or a battleship every minute. In the exalted conditions patients are usually possessed with good appetites.

In the stages of dementia the mental enfeeblement manifests itself in stupidity, impaired or lost memory. The patients are incoherent in acts and language, especially the former; they become disinterested in their surroundings, and they lack energy; they move in a listless manner and have no purpose in their walk. The degree of dementia varies from slight childishness to a condition in which all the faculties are in abeyance. They become indifferent, careless, filthy and destructive; they mutter to themselves, are untidy in dress and personal appearance, and at the table food is carelessly dropped on their clothing.

There may be perversion of the intellectual faculties without, at first, extreme melancholia, mania or dementia. Such is seen in patients who form wrong conceptions about themselves and their surroundings, thus developing delusions, either grandiose or persecutory in type, or both. These obsessions are usually of the fixed, systematized type. The more fixed and systematized an obsession becomes, the more unfavorable is the prognosis.

Insane patients are controlled by their false ideas, hallucinations and illusions. If they refuse food they are found to have delusions that their food is in some way contaminated, or, again, the voices may command them not to partake.

The second, the power of self-control in these sufferers, is weakened; they are irritable; they lose weight; they are impulsive; small causes disturb their equanimity and peace of mind, and they are easily angered. Soon they become addicted to vicious habits and intemperance, gradually progressing lower and lower.

In the third, the change in sensations and instincts, as the diseased mind becomes chronic, various hallucinations present themselves; of the sight, hearing, smell, taste and touch, and delusions of a somatic nature may develop. The normal appetite for food may disappear, or become perverted to such an extent that the patients will eat their excrement and drink their urine. The love of life may be replaced with suicidal inclinations, and the person they love the most will become their greatest enemy. A cultured person will become the personification of profanity, vulgarity, and his acts and language immoral; these all resulting in the following factor.

In the fourth, the habits of the insane, the patients become careless in dress and conduct, wet and dirty in habits; also destructive to their clothing and person, pulling out their hair and their nails from off their fingers and toes, and they may become victims of self-mutilation. Or again they may decorate themselves with valueless articles, pieces of bright-colored string or cloth, or make badges of buttons, cloth, or tin which they may find in the waste from the wards. They hide valueless articles, and forget where they have been hidden.

As a class the mentally ill are given to irritability, restlessness, sleeplessness, anorexia, refusal of food, constipation; the habit of vicious practices; impulsiveness and compulsiveness.

The classification of the several types of insanity has, in recent years, changed remarkably, so much so that there are to-day some of the old school who refuse to accept this new and remarkably scientific classification of Kraepelin, subject to modifications of personal desire. That adopted by the Committee on Lunacy in the State of Pennsylvania is a modified form of the German master, and is as follows: Infective exhaustive psychosis; alcoholic psychosis; drug and other toxic psychoses; general paresis; psychosis with gross brain lesion; traumatic psychosis; dementia præcox psychosis; dementia præcox psychosis, allied to; melancholia, involutional; and depression, undifferentiated; senile psychosis; manic-depressive psychosis; manic-depressive psychosis, allied to; paranoiac condition; hysterical psychosis; epileptic psychosis; constitutional psychopathy; constitutional inferiority; imbecility; unclassified; and not insane.

The present-day treatment in the general run of cases is as follows: Upon admission to a hospital the patient is placed in bed and given a warm drink, he next is given an alcohol bath; if a manic-depressive case with the mania predominant, it may be necesary to place him in a prolonged warm bath, or a hot pack, when the skin will become active, and the soothing effect of the heat will manifest itself in sleep, and the cessation of excito-motor activity. If it is a case of depression, the warm stimulating draught, the rest in bed, and the alcohol rub are sufficient for his immediate needs, attention of course being in all cases directed to the condition of the bladder and bowels.

In the State Hospital for the Criminal Insane at Farview, Pennsylvania, we, practically, have dispensed with hypnotics. We find that the hydrotherapeutic measures employed are both ample and efficient in controlling conditions of excitation. The use of hypnotics at times exercise a most deleterious effect upon the patients.

The room should be darkened, and all articles liable to be used for an offensive purpose removed.

Concentrated stimulating foods should be offered, and after two days' refusal of nourishment, the food should be administered mechanically, *per nasum.*

After the patient has grown sufficiently strong, he should be massaged daily, for short periods, or as the condition indicates. Too much attention makes some patients irritable, and thus retards their recovery, while other cases require this attention; thus, each case is handled on its own individual requirements.

After having been given the rest treatment, as indicated by the case, the patient is placed in a general ward, his peculiar vagaries by this time having been ascertained, everything is done to amuse and instruct him, so that if possible his abnormal train of thought may be modified or corrected.

Among the various amusements, and exercises offered the patients are light gymnastic work, base-ball, cricket, billiards, pool and various games of this nature; everything is done to induce the patients to partake voluntarily in these contests. Women patients are diverted with the lighter occupations, characteristic of their sex, such as needlework, basketry, pyrography, painting, etc., in addition to their gymnastic duties. Those showing a musical tendency are given every opportunity to cultivate their attention and skill. The effect of music upon the insane, as noted by Hippocrates, in many cases, is most beneficial.

Conditions requiring special treatment are met with as in general practice.

The prognosis of all insanities may be roughly defined as good, when the hereditary taint is not pronounced, when the onset is acute and when there is a gradual failing of the physical body in keeping with the acuteness of the mental disease.

The prognosis may be considered bad when the hereditary taint is marked, particularly on the maternal side, the time elapsing between parental insanity and time of birth having a direct influence. The longer this period the less unfortunate the influence of a precedent parental insanity.

Insanities of slow onset, particularly developmental in character and those in which there is little, if any, failure in the physical health may also be assumed to be unfavorable.

For bedsores, wash frequently with a solution consisting of two drams of ammonium chlorid, 4 ounces of water and 12 ounces of alcohol. Dry gently and powder with stearate of zinc. Of course the patient's position should be changed frequently and rubber air cushions used whenever required. Better to begin treatment before bedsore develops.

THE SURGICAL TREATMENT OF GASTROPTOSIS.

BY JONATHAN M. WAINWRIGHT, A.M., M.D.,
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(Read before the Lackawanna County Medical Society, February 17, 1914.)

The surgical treatment of ptosis of various abdominal viscera has been widely discussed ever since the extension of abdominal surgery made possible by Lister. In the present article we will take up solely the question of gastroptosis, laying aside ptosis of other abdominal viscera, except in so far as they may complicate the condition in the stomach itself.

A brief historical review will be interesting, especially as the man who has done most to place this matter on a sound basis, in America at least, is a native of our neighbor Dunmore and is now a member of the state society and living in Philadelphia. Apparently the first surgeon to formally undertake an operation for gastroptosis was Duret of Lille, France. His operation was performed in 1894 and published in 1896. Davis, an American, apparently did the second operation in 1897. Beyea's first operation was in 1898. Rovsing of Germany, who now has the largest number of operative cases, began working in 1899.

The operations of Duret, Davis and Rovsing consisted in suturing the stomach by one method or another to the anterior abdominal wall in the epigastric region. This method of suture to the anterior abdominal wall forms one of the present-day methods. The principles of this operation were entirely changed by Beyea, who was apparently the first to operate for this condition using the ligaments of the stomach only and not employing any direct fixation of the stomach to the abdominal wall or other adjacent viscera. The third general type of operation was devised by Coffee of Oregon and is known as the hammock type of operation. This consists of sewing the greater omentum to the anterior abdominal wall.

The advantages of the first type of operation, namely, direct fixation to the anterior abdominal wall, are that it is probably more effective mechanically. Its opponents, however, believe that direct fixation of the stomach interferes with its normal motility and expulsive power, and they claim that in a number of cases the patients have been made decidedly worse by this procedure. The advantages of the Beyea type of operation are that it is more rational anatomically, and that it does not in any way intereferc with the motility of the stomach. Its opponents state that the gastrohepatic omentum, which is the structure employed for remedying the position of the stomach, is too delicate to be used in suspension and that the position in which the stomach is left is not permanent. The advantages claimed for the Coffee hammock operation are that it also does not interfere with the motility of the stomach, and in addition it supports the transverse colon which may also be in a condition of ptosis. Its opponents claim that it does not efficiently control the stomach or the colon and that the omentum will stretch so as to form a long curtain which may let the stomach and colon fall down as much as before. My own personal experience has been entirely with the second or Beyea type of operation, modified, perhaps in an unessential way, which will be noted later. Before further discussing the question of operation a few words as to the condition of gastroptosis itself may be useful.

Etiology. The exact cause of gastroptosis has never been definitely determined. The condition is most common in young adults, and more common in women than in men. It occurs in nulliparous women in about a normal ratio, so that childbearing would not seem to be an important factor.

Clinical History. The history related by these patients is that of so-called chronic indigestion or chronic gastritis, and there is usually nothing in the history itself to differentiate the symptoms of gastroptosis from those of any other chronic stomach disease. Its progress is generally slow. Most patients have been complaining of symptoms for from two to ten years or more before they are willing to undergo an operation.

Diagnosis. In former years the diagnosis was made by palpation, percussion and auscultation, and especially the latter two combined. These methods were frequently aided by distention of the stomach either by ingestion of various effervescent mixtures or by inflation of the stomach by means of the tube. Fortunately the use of the *x*-ray photographs after bismuth meals has very much simplified the diagnosis of the position of the stomach and it now can be demonstrated with perfect visual exactness. The use of the *x*-ray, therefore, at the present time is essential in determining the presence and degree of gastroptosis and in forming an opinion as to the advisability of an operation.

Selection of Cases for Operation. This is, perhaps, the most difficult of all the problems connected with this condition. In the first place we must remember that many people have more or less severe degrees of gastroptosis without serious gastric symptoms. The operation can first come up for consideration only when the symptoms are severe enough to warrant it. Then when severe symptoms are present we must convince ourselves that they are due either wholly or in large part to the position of the stomach itself and not to other things. Nearly all of these patients have more or less of the clinical conditions grouped under the term neurasthenia, and we must satisfy ourselves that the neurasthenic symptoms are due to the position of the stomach and consequent malnutrition, and not to an essential neurasthenia in which a ptosis of the stomach is an accidental and symptomless accompaniment. We must also remember that we are not discussing here cases of abdominal distress due to marked relaxation of the abdominal walls with diastasis of the recti muscles. Furthermore, we must take into consideration the possibility that there is an accompanying ptosis of other viscera, especially the kidneys, cecum or colon. When there is also ptosis of other viscera we must carefully differentiate, if possible, the symptoms caused by each and if necessary remedy other conditions in the same sitting or later. Mobility of the right kidney is especially common. As Dr. Wall will bring out a sister paper to this we believe that when there is a movable kidney there is practically always a movable and dilated cecum which contributes an important proportion of the symptoms the patient complains of. Dr. Beyea has also noted a movable right kidney as an accompaniment to gastroptosis, but in his cases he believes that the relief from operation on the stomach has been so great that the remaining trouble due to a movable kidney is negligible. In one of my own cases a movable kidney was present at the time of operation and this condition has remained unchanged. It does not distress the patient nearly enough to lead her to consider a second operation for its relief.

Operative Technic. Dr. Beyea's technical descriptions of his operation are so accessible that they need not be repeated here. In the present operative series his technic has been followed as closely as possible except that we felt it desirable to add to it the old-fashioned reefing operation on the anterior surface of the stomach. This is done by six or eight linen stitches passing across the anterior surface of the stomach from the greater to the lesser curvature. This procedure diminishes the size of the stomach, which is always increased in this condition, and we believe that it adds something, at least, to the efficiency of the Beyea operation. When both series of stitches are tied, the lesser curvature is not only close up to the hilus of the liver but the entire stomach is rolled up into a comparatively small tube tucked close up against the under surface of the liver and entirely above the middle of the laparotomy wound which extends ordinarily from the ensiform to the umbilicus.

Case Reports. Reviewed very briefly our case reports with the subsequent histories are as follows. In considering the value of any surgical measure applied for the relief of symptoms which are solely subjective we must, of course, rely entirely on the statement of the patient, except so far as general appearance and increased weight may indicate better health. Therefore, in addition to the usual questions as to the subsequent course of various symptoms we have found it useful to ask point blank "Do you consider that the operation helped you?" The reply to this question is as far as possible given below in each case, and this is after all the crucial point for each individual.

Case 1. Mrs. W. R. D., aged twenty-nine, housewife, had operation for gallstones in another hospital eighteen months ago. Since this operation she has had constant severe pain and weight in epigastric region, often nauseated but no vomiting; appetite very poor. X-ray shows stomach well down in pelvis. Operation, June 22, 1911, under ether: Numerous adhesions, between pylorus and site of gall bladder operation, separated. Beyea operation with reefing of anterior wall. Last seen thirty months after operation. She felt perfectly well for three months, but after this stomach symptoms returned to a slight extent; has no real pain but has some distress after meals; has continued to do all her own house-work. Before operation had to have a maid.

Case 2. Mrs. S. R., aged thirty-nine, housewife, had severe dragging pain in epigastric region for about one year; very poor appetite and frequent vomiting. X-ray showed stomach well down in pelvis. Operation, May 8, 1911, under ether. Uncomplicated ptosis. Unmodified Beyea operation. Seen thirty months after operation, patient is entirely relieved of stomach symptoms, has gained twenty pounds, and is much stronger in every way. Before operation used to vomit once or more every day. Has not vomited at all since. Appetite good. Eats everything in reason. Q. "Did operation help?" A. "Oh mercy yes. Before operation I was in bed most of the time and could not walk a block. Now I can walk as well as most people and go out as freely as anybody."

Case 3. Mrs. B. C., aged thirty-nine, housewife, for fourteen months had had severe dragging pains in region of stomach; for days at a time would vomit everything, even a glass of water. X-ray showed stomach well down in pelvis. Operation, October 31, 1911, under ether. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Last seen twenty-six months after operation, patient has gained twenty pounds and is still gaining; has no symptoms referable to stomach; eats well. For several months before operation had been in bed most of the time with help in house. Three weeks after operation began doing all house-work for husband and three children. She has continued this ever since with no trouble. Has never vomited since operation; never has pain. Before operation pain used to be "fierce." Q. "Did operation help?" A. "Yes. I would have been dead if it had not been for that."

Case 4. Mrs. M. E., aged thirty, housewife, for past six months had had dull aching in epigastric region; vomited once or twice every day; general health poor. X-ray showed stomach well down in pelvis. Operation, December 30, 1911, under gas and oxygen. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Seen twenty-four months after operation, patient had gained fifteen pounds. No complaints referable to stomach. Appetite good. No indigestion of any kind. Is gaining right along. Q. "Did operation help?" A. "Yes. Feel well and don't vomit and don't have pains. Pains used to be so bad I wonder how I ever stood it."

Case 5. Miss E. T., aged thirty, inspector in lace mills, had indigestion for six years; severe pain after meals for three years; lost fifty pounds. Pain was so severe that for long periods she would "have inward convulsions every day." X-ray showed stomach well down in pelvis. Operation April 13, 1912. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Seen twenty-two months after operation, patient had gained fifty pounds. For past year has been working regularly in silk mills with no trouble. Menstruation which had been absent for six months returned three months after operation and has continued regular. Q. "Did operation help?" A. "It was a big success. Life is worth living now. I feel fine and do not have any trouble with my stomach. Eat everything."

Case 6. Mrs. E. L. S., aged thirty-seven, housewife, for ten years had had severe stomach trouble; gradually getting worse all the time notwithstanding treatment by an internist in Philadelphia; severe pain after eating. "Vomiting has been my chief occupation. I have been vomiting all the time for ten years." X-ray showed stomach well down in pelvis. Operation April 11, 1912, under gas and oxygen. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Seen twenty-two months after operation, she had gained twenty-three pounds in six months and holding it; never vomits; eats everything; no pain; much more vigorous. Q. "Did operation help?" A. "Oh yes. Would not have been alive. Can never be thankful enough I had it done." Still has right movable kidney which causes her very little trouble.

Case 7. Mr. J. M., aged twenty-seven, bill collector, for five months had had pain after eating; large amounts of gas, palpitation of heart and marked neurasthenic symptoms. X-ray showed stomach well down in pelvis. Operation January 22, 1912, under gas and oxygen. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Seen one year later, stomach symptoms were little if any better. Still has palpitation of heart. Neurasthenic symptoms not improved.

Case 8. Mrs. M. T., aged twenty-eight, housewife, for eight years had had very marked indigestion; vomited frequently. X-ray showed stomach well down in pelvis. Operation, January 18, 1913, under ether. Uncomplicated ptosis. Beyea operation with reefing of anterior wall and hammock operation on great omentum. Patient seen thirteen months after operation, has never vomited since operation, has no more pain, eats everything. Rarely some special food will give slight trouble from gas. Weight is increasing. Feels well. Does all her own housework. Q. "Did operation help?" A. "Oh yes. Have no trouble now. Before operation could not walk standing up straight. Pain would often be so bad that I would scream until relieved by vomiting."

Case 9. Mr. H. C., clerk, had stomach trouble for five years; considerable gas; always heavy feeling after eating; very careful of diet; frequent severe cramps; occasional vomiting. X-ray showed stomach well down in pelvis. Operation, March 13, 1913, under ether. Uncomplicated ptosis. Stomach could be pulled down as far as symphysis pubis. Reefing of anterior wall. Seen eleven months after operation. He went to work two months after discharge; has since been working regularly; is much stronger and has gained twelve pounds; no more vomiting. Q. "Did operation help?" A. "Oh yes. Don't have constant distress. Eat ordinary diet and have no trouble except sometimes after eating something very indigestible. Ate Welsh rarebit last week with no discomfort."

Case 10. Miss A. P., aged thirty-six, no occupation, for two years had had distress after eating, gas, headaches, palpitation of heart, weakness, faintness, poor appetite and general poor condition. X-ray showed stomach well down in pelvis. Operation, May 10, 1913, under gas and oxygen. Numerous adhesions around cecum and colon; cecum dilated. Adhesions were separated and cecum narrowed by Blake stitch. Ptosis of stomach. Beyea operation with reefing of anterior surface. Patient seen nine months after operation. Vomiting which was very frequent before operation has stopped. She has had no gas or symptoms referable to stomach. General health and strength did not improve very much for first four months but lately improvement in these has been rapid. Still sleeps poorly and has some nervous symptoms and has slight pain at times in right lower abdomen. Q. "Did operation help?" A. "Wonderfully. Life was useless for six months before operation. Was in bed most of the time and pain was terrible."

Case 11. Mrs. R. W. S., aged thirty-six, housewife, for last ten years had had severe indigestion; pain after meals very severe; been rapidly losing flesh and strength recently. X-ray showed stomach well down in pelvis. Right kidney movable. Operation, May 17, 1913, under gas and oxygen. Uncomplicated ptosis. Seen nine months after operation, general health was much improved; been pregnant for last three months; ordinary discomforts of this condition. Q. "Did operation help?" A. "Oh yes. Before becoming pregnant I considered myself perfectly well."

Case 12. Mrs. R. K., aged thirty-two, housewife, for past year had had severe indigestion with marked pain after eating. X-ray showed stomach well down in pelvis. Operation, October 11, 1913, under gas and oxygen. Uncomplicated ptosis. Beyea operation with reefing of anterior wall. Patient discharged November 3, 1913, eating on general diet with no discomfort; not seen since operation.

Of these cases the first patient was operated on thirty months ago, the last four months ago. All but one patient have been seen at intervals varying from nine to thirty months. Nine patients can be fairly considered entirely relieved and form an unusually grateful series of patients. One patient was entirely relieved for three months. After this time the symptoms began to return and soon she was as bad as ever as far as her stomach symptoms go, though her general health and strength still remain much improved and instead of being a chronic invalid she is doing all her own house work. This was the only case in which numerous adhesions around the pylorus were a complicating feature. It is possible that these adhesions have recurred. A very interesting feature of this case is that an *x*-ray plate taken thirty months after operation, when she made this above report, shows the greater curvature of the stomach still one inch above the umbilicus. One case was a complete failure. This was a man who also complained severely of palpitation of the heart and had marked neurasthenia. His was undoubtedly a case of essential neurasthenia and it was an error to select him for operation. The last case operated on four months ago has not been reviewed.

DILATED CECUM.

BY RUSSELL T. WALL, M.D.,
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(Read before the Lackawanna County Medical Society, February 17, 1914.)

Until recently the appendix has been regarded as the etiological factor in nearly all cases of chronic discomfiture and pain in right iliac region in which the ovary, the tube or kidney could be excluded. The appendix has been looked upon as the most likely cause of these pains and its removal is frequently the sole operative procedure; the conditions which are the real cause of the symptoms being often untouched.

Closer observation and a more careful analysis of the late results in cases in which the appendix has been removed in so-called chronic appendicitis has shown that a large percentage had not been relieved of their pains after the removal of the appendix. Numerous causes have been brought forth which will account for some of these discomforts, as pericolitis, Jackson's membrane and Lane's kink. According to different men these conditions have been the cause of a great many right-side pains.

The idea, in this paper, is to bring forth a condition which we believe gives rise to a considerable number of our right-side discomforts, that is, the dilated cecum.

Blake was probably the first to bring to our attention the fact that a dilated cecum is a possible cause for right-side pains. He believes, not as a great many observers do that the pain is due to a movable cecum, but that the chief characteristic of this cecum is not its mobility but rather its size, and it will be found that the symptoms are better explained by the hypothesis of an atonic dilatation as a cause rather than the mechanical obstruction due to the kinking caused by its mobility. Other observers, such as Wilms of Heidelberg, believe that it is the dilated cecum associated with certain unnatural mobility that gives rise to the pain. He believes that the trouble is due to stagnation of the intestinal contents over a long period of time in the cecum. He has shown by the *x*-ray that the contents may remain in the cecum for twenty-four hours or more. Their consistency becomes thicker and the rest of the colon is forced to exert greater power to push these thickened contents on. As a result of this stasis an antiperistaltic action takes place in the colon. These, together with spastic conditions due to the irritation, cause attacks of pain.

A series of twenty-four cases which we have had opportunity to observe over a period of one and a half years have led us to believe that the dilated cecum can play an important part in right-sided diseases of the abdomen.

We have noticed, as no doubt everyone else has, that in a considerable number of cases in which the appendix had been removed for so-called chronic appendicitis the symptoms were not relieved and the patients returned saying they were not improved.

The diagnosis in most of our cases of dilated cecum has not been made before operation but upon opening the abdomen. Four of these were in patients who had already been relieved of an appendix or ovarian cyst.

The history of all these cases seems to be along the same line. The patients will complain of dull right-sided pain with or without acute attacks, usually marked constipation, indigestion or rolling of gas in that portion of the abdomen. The physical examination may show a slight fullness in this region, tenderness upon palpation, a splashing sound or gurgling upon manipulation with the fingers, with tympany upon percussion. It seems to be more frequent among women, twenty-three of our cases being in women. We have noticed that it is often associated with ptosis of other viscera, eight of the above cases having very freely movable kidneys.

Upon opening the abdomen the picture that presents itself is usually a very much dilated cecum, often the size of two fists, forming a distinct sac which would naturally act as a receptacle for the intestinal contents, so that it would be difficult for the cecum to empty itself. Other cases will show a very much dilated cecum with a marked relaxation. In some of the cases the cecum is so relaxed and mobile that it becomes a pelvic organ.

The operative treatment consists in removal of the appendix when present and reefing in the cecum from two to four inches by sewing the anterior and external longitudinal bands together with continuous linen suture. After this has been done we have noticed that in some cases the cecum is still larger than a normal one. In conditions when the cecum is very freely movable two linen sutures are placed in the first line of sutures and then fixed to the parietal peritoneum of the right iliac fossa, well to the right side. This can be very easily done through the ordinary appendix incision. These patients usually have an uninterrupted recovery with no unusual symptoms and are allowed to leave the hospital in from twelve to fourteen days.

Brief abstracts of our cases will best show the symptoms and results of treatment.

Case 1. W. B., female, aged twenty-two years, had right-sided pain one year in duration, vomiting at times, marked constipation. Findings: Appendix thickened, cecum dilated. Appendix was removed and cecum reefed in. Patient returned seven months later, saying she was well in every way. Bowels regular. Works every day.

Case 2. P. K., female, aged seventeen years, had constant pain in right side with no severe attacks; constipated; appetite poor. Findings: Appendix slightly inflamed was removed. Cecum dilated, was treated. Patient returned six months later; said the pain was entirely gone. Bowels regular. Weight is the same.

Case 3. A. M. L., female, aged eighteen years, four months ago was taken with pain in right side; never confined to bed; nausea and vomiting; constipation. Findings: Adherent appendix removed. Dilated cecum sutured. Patient returned three months later with none of the original pain or constipation.

Case 4. B. C., female, aged twenty-seven years, had chronic pain in the right side; acute attack two years ago. Headache; tires very easily. Findings: Right kidney, freely movable, was fixed. Slightly inflamed appendix was removed, and a dilated and freely movable cecum was reefed in and fixed to the parietal peritoneum. Patient returned eight months later. Original trouble gone and she has gained twenty-five pounds in weight. Does work about house that she never thought was possible a few months ago.

Case 5. A. C., female, had chronic pain in the right side with slight tenderness and sense of fullness; freely movable right kidney. Findings: A movable kidney was fixed. Appendix containing a concretion was removed and cecum, very much dilated, was sutured. A letter from the patient six months later said that she was well in every way.

Case 6. B. K., female, aged twenty-eight years, had pain in right side for three months; no acute pain; marked constipation; appetite poor; headache. Findings: Appendix, chronic condition; cecum dilated. Appendix removed and cecum sutured. Patient returned six months later. No pain in right side, bowels regular, gained in weight.

Case 7. M. McC., female, aged twenty-two years, for two years had dull pain in right side, indigestion; was confined to bed for one week. Findings: Appendix tense and congested, was removed. Cecum enlarged, was reefed in. Patient returned eight months later well in every way. No pain or indigestion.

Case 8. M. S., female, aged twenty years, two years ago had pain in right side, never was severe; considerable constipation. Findings: Appendix, no special change, was removed. Cecum, enlarged and freely movable, was reefed in and fixed to the parietal peritoneum. Patient has not returned for examination.

Case 9. L. W., female, aged seventeen years, was operated on for appendicitis but not relieved. She returned; was operated on again. We found few adhesions but very large cecum. This was reefed in and fixed to parietal peritoneum. Patient has not returned for examination.

Case 10 E. M., female, aged nineteen years, had dull pain for one and a half years in right side of abdomen; bowels constipated; nausea. Findings: No changes in appendix but it was removed. Cecum which was very much enlarged and freely movable was reefed in and fixed. Patient returned six months later. Girl is perfectly well in every way; no pain or nausea; bowels regular.

Case 11. E. D., female, aged twenty-seven years, had dull aching pain in side for several years. General health poor. Constipated. Findings: Appendix swollen with kink was removed. Cecum enlarged was reefed in. Seven months later patient returned saying she has had no trouble since operation. She is in perfect health; has gained five pounds in weight; still constipated.

Case 12. M. W., female, aged twenty-two years, has had pain in right side for three months with two acute attacks; in bed for several days at a time; constipated. Findings: Appendix, long, was removed. Cecum enlarged and freely movable was reefed in and fixed. Patient returned nine months later feeling well in every way; two months pregnant.

Case 13. Mrs. S. R., female, aged thirty-three years, was operated upon one year before for removal of appendix and right ovarian cyst. She was well for about one year then complained of old pain in right side so could not work. Constipated. Findings: Few adhesions with very large movable cecum which was reefed in and fixed. Patient returned three months later; pain in side gone, and she feels good but is not up to her regular strength; does work for six people.

Case 14. L. R., female, aged twenty-nine years, had history of having been operated upon in 1909. Appendix was removed; has had severe pain in right side since operation. Findings: Few adhesions which were broken up. Cecum, very much enlarged and freely movable, was reefed in and fixed to parietal peritoneum. Returned five months later. She says she never felt better in her life.

Case 15. E. S., female, aged twenty-three years, for several years had pain in right side; vomiting at times. Findings: Movable kidney which was fixed; pus tube removed; chronic appendix removed. Enlarged and movable cecum was reefed in and fixed to parietal peritoneum. Patient returned three months later, says she feels well in every way; had slight attack of diarrhea.

Case 16. A. M., female, aged thirty-five years, had pain in right side for several weeks; vomiting at times; headache and constipation. Findings: Appendix, atrophied, was removed. Cecum, enlarged and movable, was reefed in and fixed to parietal peritoneum. Fourteen months later patient returned saying indigestion was entirely gone; no pain or vomiting. Bowels work regularly.

Case 17. F. W., male, aged thirty-eight years, had dull pain in right side for several months; constipation; no acute attacks, loss of weight. Findings: Appendix slightly swollen, was removed. Cecum enlarged was reefed in. Patient returned one year later; feels well in every way. Gained twenty-three pounds.

Case 18. W. P., male, aged thirty-four years, had pain in right side of abdomen with considerable gas in right side, constipation. Findings: Appendix, small, was removed. Cecum dilated was reefed in. Patient returned fourteen months later. All previous symptoms absent; bowels regular. Gained thirty-five pounds in weight.

Case 19. L. R., female, aged twenty-two years, had pain in right side with attack of vomiting; no acute attack; constipated; anemic. Findings: Appendix, in slightly swollen state, was removed. Cecum very much dilated and freely movable was reefed in and fixed. Five months later when seen she was feeling well; no pain or constipation. (Still strength not what it should be.)

Case 20. B. W., had history of appendix having been removed, but, since operation, conditions have been same with pain and discomfiture. Findings: Cecum, very much enlarged, was reefed in. Patient writes eighteen months later that she still has pain in abdomen, indigestion and constipation.

Case 21. E. G., female, aged eighteen years, was operated upon and appendix removed in 1911; has been no better since operation; marked constipation. Findings, second time: Cecum dilated, was reefed in. Prolapsed ovary fixed. Patient has not returned for examination.

Case 22. Mrs. B., had pain and tenderness in right iliac region. Findings: Median incision, appendix normal, removed. Cecum, very much enlarged and movable, was repaired and fixed. Patient has not returned for reëxamination.

Case 23. Mrs.Mc., aged twenty-nine years, had pain in right side with great amount of gas; constipation. Findings: Appendix, normal, was removed. Cecum, very much enlarged, was reefed in. Patient not traced.

Case 24. Mrs. Mc., aged twenty-nine years, had chronic pain in right side with great amount of gas. Constipation. Findings: Appendix not involved, cecum dilated and movable. This was sutured and fixed to parietal peritoneum. When seen six months later she said there was no pain of any kind. Bowels now move normally.

Of the cases just given, four patients had had previous operations for chronic appendicitis but had not been relieved. Two of these patients have been entirely relieved of their trouble, one writes that she still has some of the original trouble, the fourth has not been heard from. Four had movable kidneys fixed with the operation upon cecum. Three of these have been entirely relieved of their symptoms; one has not been seen since the operation. Fourteen give history of marked constipation. Of ten of these cases seen, seven have been relieved. Of entire number of cases, eighteen have been seen since operation and with two exceptions they have seen marked improvement in their trouble.

In some of the cases improvement must be attributed to fixation of kidney, or removal of cystic ovary or removal of appendix, and it is problematical how much can be attributed to suture of cecum, but for a great number of them we must give the suture of cecum the credit, especially where gas has been relieved, indigestion improved and constipation corrected.

From the observation of the above cases I believe the following conclusions are warranted: (1) That dilated mobile cecum is the cause of a great many cases of right-sided discomfiture which are laid at the door of chronic appendicitis; (2) that dilated cecum is very common and often overlooked; (3) that, in every operation for appendicitis or abdominal trouble where practical, the cecum should be inspected and reefed in if dilated.

OVERWEIGHTS IN INSURANCE.

One of the most important factors in medical selection for life insurance is the applicant's build. Dr. H. A. Baker, medical director, Pittsburgh Life and Trust Company, states that it was formerly supposed that the average build represented the best mortality at all ages and medical selection has been based upon this theory, but the recent work of the Medico-Actuarial Investigation has shown that the best mortality is not found among those of average build at all ages, but in those at the younger ages who are slightly overweight, and at the older ages among those who are distinctly underweight. This committee compiled a table called the M. A. table—a standard table of mortality which could be used for testing the degree to which the mortality of the various classes differs from the average combined experience of all the companies. Overweight has long been regarded as a serious impairment to a life insurance risk. In judging overweights found in insurance work, one can be reasonably certain that in the majority of cases it was stated that "no excess adipose tissue was present," also that "the overweight was due to muscular development." Such, however, is not the case and the law of general average can not be escaped. According to the arrangement of the M. A. table slight corrections must be made in the case of very short or very tall men, as the given departure from the standard is a greater percentage in the case of a short man than of a tall man. Therefore in the overweights we should make the percentage mortality slightly higher for very short men and slightly lower for very tall men. Men from twenty to twenty-four years of age can be accepted fifty to sixty pounds over the normal showing a mortality of only 110. Ages twenty-five to twenty-nine with the same overweight show a mortality of 116, and sixty-five to eighty, overweight the same, show a mortality of 132. At the ages thirty to thirty-four we begin to reach a high mortality at thirty-five to forty-five pounds over the standard. In the next group, ages thirty-five to thirty-nine, the mortality becomes excessive when thirty-five pounds over the standard is reached, and for all ages over forty this table shows that applicants who are more than thirty pounds overweight must be considered sub-standard risks. At age forty, height five feet, eight inches, thirty pounds over the standard represents nineteen per cent. overweight.

There are some factors which make an overweight a much more desirable risk than the average overweight, while there are other factors which make him a much poorer risk. Among these factors are occupation, habits, family history, personal history, abdominal measurement, blood pressure and the personal equation. Occupation.—Dr. Baker considers that in the most favorable occupations, such as lawyer, clergyman, teacher, etc., a deduction of ten to twenty points can be made from the table, while in the case of a hotel keeper, a rating for overweight should be added to the rating for occupation. Habits.—In the case of abstainers from alcohol it may be considered safe to deduct twenty points from the overweight table, and ten points in the case of those who now abstain, but who in the past have used alcohol in moderation. This will bring many overweight abstainers within the standard class. However, the slightest use of alcohol in an overweight must be viewed with grave suspicion. Alcohol and overweight go hand in hand to an early mortality. Deductions should not be cumulative. If you have deducted twenty points because an applicant is a clergyman you should not deduct twenty points more because he has always been a total abstainer. Family history.—It is safe to conclude that a maximum deduction of twenty points can be made from the M. A. table in the case of applicants whose family history shows the highest degree of longevity, and a deduction of ten points in the case of applicants where the family history is undoubtedly better than the average family history represented in this table. Personal history.—Nothing can be deducted from the table for a fine personal history. Suffice it to say that any impairments, such as gout, rheumatism, syphilis, and all other diseases which constitute an impairment, must in each case be added to the rating for the overweight, making a substandard risk. Abdominal measurement.—A certain percentage must be added in each case where the abdomen is larger than the chest. It will be reasonably safe to add to the M. A. table ten points for each inch that the abdominal measurement exceeds the maximum chest measurement. Blood pressure.—There are no published figures on blood pressure as applied to overweight. Dr. Baker considers it would be fair to deduct ten points from the table for an exceptionally good blood pressure associated with pliable arteries. The slightest indication of high blood pressure in an overweight is sufficient to sub-standardize the risk to a point where rejection becomes a necessity. Personal equation.—After all is done and our overweight has been rated in strict accordance with scientific principles, there still remains that intangible element of personal opinion. Let us, therefore, make our exceptions few and far between, particularly with regard to overweights, and if one ever has to be made let it be because the moral and financial elements of the case are exceptionally perfect and not because there is a "hunch" that the risk will pull through in spite of his overweight.—Medical Section, American Life Convention.

THE REGULATION OF OPTOMETRY IN PENNSYLVANIA.

In 1913, the scope of the work of the Bureau of Medical Education and Licensure was broadened so that it not merely was the administrative board of medical practitioners, but it included drugless therapy (chiropractic, neuropathy, spondylotherapy, in fact of all but osteopathy), chiropody and midwifery. The administration of these allied branches of medicine has been so fair and successful that any different method employed in the regulation of optometry should not be considered.

In attempting to regulate optometry, this board was haled into a Philadelphia Court by our optometrical friends and an injunction issued by two local judges restraining such examinations. This entailed the necessity of further legislation; two bills have been introduced into the state legislature on this subject, the essential difference between them being as to the administration of such regulation—one placing this in the hands of the Bureau of Medical Education and Licensure and the other, in the hands of the optometrists themselves—and this is the crux of the matter.

The first bill (No. 205 in the House Calendar) provides for the examination of optometrists at present actually engaged in the practice of optometry and for the regulation by a course of study followed by examination, in the future (six months after the passage of the bill) of those desiring to practice optometry. This bill is drawn to include every demand for the protection of optometrists, as well as for the protection of the public. The actual examinations are to be made by an advisory board composed of optometrists. The optometrists admit the necessity of regulation but demand the control of such regulation themselves. The board is willing to include by amendment into this bill, any features which optometrists can reasonably demonstrate are desirable.

The creation of an independent board of optometrists is distinctly inadvisable. The Efficiency Committee appointed by the last Legislature to investigate the subject of administration, recommend that all such boards be consolidated into one. In professional and semi-professional matters, the state has practically committed itself to the policy that no more independent boards shall be created. Further, no body of men should be authorized to administer a law in which they have a direct financial interest. This bill will come up for action shortly; it has been referred to the House Committee on Public Health and Sanitation. Charges of favoritism and self-interest have been made on both sides but these must be disregarded.

Do not belittle the honest work of many examining opticians, or optometrists as they are now called. Unfortunately, there are too many general practitioners prescribing glasses without any further preparation than the necessarily meager ground work obtainable in a crowded medical curriculum.

There is no denial of the rights of the optometrists; they must be dealt with fairly; their profession is one of ancient standing and, until a comparatively recent date, a large part of that which is done by optometrists was exclusively within their province and was not covered in practice by the efforts of the physician or surgeon.

Notwithstanding the decision of the judges in a Philadelphia court last October to the contrary, optometry and ophthalmology overlap each other to such an extent that optometry must be called a branch of medicine—semi-professional if you wish.

We are interested in this matter individually and as a school. It is not sufficient that we sit back and allow other schools and societies to protect the general interest of the profession and the public in educational and legislative affairs. As homeopaths, we should be in the fore in all constructive work, and it behooves us to take some definite action in this matter in our state and local societies. Further, it would be of benefit if the individual physician would give a few minutes of his busy time to writing to his local representative in the House of Representatives in favor of this bill (No. 205).

It seems highly desirable that all professional and semi-professional occupations be under the regulation and administration of a central board, as is the case in New York under the Board of Regents. Pennsylvania will eventually adopt such procedure. Such a board will then control osteopathy, pharmacy, and dentistry as well as medicine and surgery and their allied branches, and a bill to this effect has already been introduced into the state Legislature. Centralization is the keynote of efficiency!—W. M. HILLEGAS, *The Hahnemannian Monthly*, February, 1915.

The Pennsylvania Medical Journal.

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All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

Athens, March, 1915.

ANESTHESIA, GENERAL AND SPECIAL.

The last few years have witnessed a great revival of interest in the subject of anesthesia and have been marked by the introduction of a number of new methods and the revival of some old ones, each of which has its enthusiastic advocates. As examples of this interest in the subject may be cited the articles on local anesthesia, spinal anesthesia and narcotic anesthesia in the present number of the Journal. These methods can be no longer considered novel in themselves, having had their birth some years since, but they have undergone many changes since the original technic was published, changes which were suggested by deeper study, greater knowledge of the physiological problems involved, as well as a wider experience in their clinical application. These changes have added materially to their safety and usefulness, although they have not tended to greatly simplify them. Many other instances showing the general interest in this subject might be cited.

The American Association of Anesthetists, founded in 1912, has as its object the bringing together in conference of surgeons, physiologists, chemists, pharmacists and anesthetists to aid in the solution of the problems connected with the subject (Dr. Gwathmey's presidential address 1913). The anoci association methods of Crile largely depend on the methods of anesthesia, local and general, which are employed, and are too well known to need any comment. The intratracheal method of Meltzer, introduced by a physiologist, has been quickly taken up by the surgical profession and is especially valuable in the difficult field of thoracic surgery. Rectal anesthesia has been revived and intravenous anesthesia and notably the methods of accurate dosage of anesthetic agents, as worked out by Karl Connell and others, are respresented by some of the most recent contributions to this subject.

A word of caution may not be out of place at this time as to certain dangers which may attend the too hasty adoption of some of the newer methods of anesthesia, including even those which are no longer in the developmental stage. Where these methods are used with judgment, by men who are well trained in them and who have the knowledge and experience required to select the cases and to carry out the sometimes difficult technic, not only the mortality but the morbidity of anesthesia may be materially reduced. The danger lies in the too enthusiastic adoption and the indiscriminate application of the newer methods to the exclusion of the older, safer and less spectacular forms of anesthesia. A partisan spirit also may prejudice one in favor of or against this or that method. In one of the world's greatest clinics almost the simplest method of anesthesia which is known, namely the "drop method" of administering ether, is almost universally employed. In another great American clinic, nitrous oxid and oxygen, a more dangerous method except in the hands of an expert, much more costly and requiring a somewhat complicated apparatus, is usually practiced. The ideal attitude for the surgeon is that which bears in mind the motto of "safety first," which achieves its ends by simplified methods, where these are equally efficient, which keeps an open mind in the selection of new methods and endeavors to apply them not indiscriminately, but to the class of cases to which they are best adapted. At the present time, no one method of anesthesia would be considered appropriate for universal application, but the attempt should be made to differentiate between the indications for the different forms of anesthesia, to thoroughly master the technic of those which are proven to be safe, and then to apply them in the individual cases to which they are best adapted.

J. H. J.

A NATION WIDE CANCER MOVEMENT.

The annual meeting of our Cancer Commission was recently held in Philadelphia. It was decided to continue work along the lines previously followed and in addition a new plan was devised which it is felt will have a greater influence on the reduction of cancer mortality than anything that has yet been attempted either in this country or abroad.

This plan is to induce every medical journal in the United States to publish a special cancer issue in July. In this issue a large number of original articles will be devoted to cancer with special reference to early recognition and treatment. Secondly, the journals will give editorials in support of cancer education, etc., and finally, in order to further emphasize the matter the various journals will contribute a full page advertisement calling special attention of their readers to the present campaign.

The promise of hearty coöperation has already been received from the *Medical Record*, *New York Medical Journal*, *Surgery, Gynecology and Obstetrics*, and the *American Journal of Medical Sciences*. It is needless to add that our own Journal is to give the entire movement its best support.

As a subsidiary part of this plan the Commission is trying to induce every county society in this country to have a special symposium on cancer in June. We believe that a series of symposiums in June followed by a flood of cancer literature the next month will arouse interest in the early recognition in cancer which will last for many years, and we believe that this movement will very much redound to the credit of American medical journalism in this country and abroad.

J. M. W.

ANNUAL LIST OF MEMBERS.

The regular annual list of officers and members of the component county societies will be published in the April Journal and will contain only the names of those whose per capita assessment has been received at the office of the state secretary. No other list will be published during the year. It is worth more to any practicing physician to have his name appear in this list than the amount of his annual dues paid his county society.

As we go to press the per capita assessment has been received from a little less than two thirds of our members, but each mail brings receipts and checks, and there is every reason to believe that there will not be more than the usual number of members dropped for non-payment of dues. There are always a certain number who will delay the payment of annual dues until the last moment and it matters little to them whether the last moment occur in January, in March, or in July.

The secretary wishes to express his appreciation of the hearty coöperation given his office by the county secretaries and editors of bulletins in making the change from the old plan of collecting and forwarding the per capita assessment to the new plan. S.

"THE REGULATION OF OPTOMETRY IN PENNSYLVANIA."

Attention is called to the reproduction on a previous page of an editorial from *The Hahnemannian Monthly* with the above title. It is hoped that each of our readers will carefully consider this subject and be prepared intelligently to discuss the measure with his senator and representative. It is predicted that from now on legislative matters will move rapidly so that the Legislature may adjourn on May 8.

House Bill No. 205 places the licensing of optometrists in the hands of the Bureau of Medical Education and Licensure, but specifically states that "the examination shall be conducted by a board of examiners consisting of practicing optometrists." Section 3 provides that "every person who is actually engaged in the practice of optometry in the State of Pennsylvania at the time of the passage of this act, shall within six months thereafter file an affidavit in proof thereof with the Bureau of Medical Education and Licensure of the Department of Public Instruction and shall satisfy the bureau of their competency by an examination in practical and theoretical optics, conducted by a board of examiners consisting of practicing optometrists, who have been engaged in optometry for at least five years, and who shall be appointed by the Bureau of Medical Examination and Licensure." This bill is eminently fair and it is hoped that our legislators will enact it into a law.

The optometrists have had introduced into both the Senate and the House (Senate Bill, No. 141; House Bill, No. 251) a bill creating "a Bureau of Optometrical Education, Examination and Licensure of the Department of Public Instruction." These bills which are identical ask for a much wider range of authority than is assumed by the other allied branches of medicine. The dentists, the pharmaceutists, the veterinarians, the osteopaths are all licensed to practice by examining "boards." The optometrists ask to operate as a "bureau" and to assume functions far wider than those of an examining "board." We already have too many bureaus and boards and the number is increasing at each legislature. A committee of the Senate and House appointed two years ago to consider the whole subject of administration of the various departments of the state recommended the consolidation of all boards of similar nature into one board for each department. Already three other medical boards or bureaus have been asked for in this Legislature. Ask your representatives to vote for House Bill No. 205 and against House Bill 251. S.

ANOTHER MEDICAL BOARD PROPOSED.

House Bill No. 385, introduced by Hon. W. H. Wilson, Philadelphia, provides for a State Board of Drugless Therapeutics consisting of one representative from each of the following schools, neuropathy, manual therapy, chiropractic, spondylotherapy, vacuum therapy and naturopathy. These people are already provided for under the Bureau of Medical Education and Licensure and the great majority of them are satisfied with this disposition, but many of our legislators seem inclined to give each new aspirant a separate board or bureau. All that is necessary to enlist the sympathy and secure the support of some laymen is to bring out the old bogy of "persecution by the doctors."

There is no other class or calling of men that does so much unselfish work for the public as does the medical profession. We are busy looking after the needs of the sick, often without pay. We try to prevent sickness and disease and thereby lessen the conditions that give us our bread and butter, but we neglect properly and systematically to educate the public and influence politicians. How many physicians who read this article will ask their representative at Harrisburg to place the examination and licensing of all who wish to treat the sick or deformed under one bureau? When we write or speak to our representatives how many of us will take time and thought to write or speak so fairly and so intelligently that it will be evident that we are not seeking our own selfish interests? A senator who is a physician made the statement at Harrisburg recently that the physicians of his county do not wish any of the opticians to be licensed to fit glasses. The writer knows that this is not a fact, but the physicians do wish that those who fit glasses shall be competent to do ordinary refractive work and capable of deciding the probability of the presence or absence of diseased conditions not amenable to lenses. S.

THE PHILADELPHIA SESSION.

All preliminary arrangements for the next annual session of the state society have been made and I believe that we have never had such a satisfactory outlook for a great meeting.

All scientific, social and business meetings will be held in the Bellevue-Stratford Hotel and the Commercial Exhibit will also be held there, so that it will not be necessary to go out of the splendid hostelry to attend any of the meetings or to visit the Commercial Exhibit.

The annual sessions of the Medical Society of the State of Pennsylvania have a reputation of being almost equal to those of the American Medical Association, in scientific work, in attendance, and in general activity and, because of the fact that the American Medical Association will meet in the West this year, we will be the big attraction in the East.

Members should make their reservations early if they expect to be housed at headquarters.

WILLIAM H. CAMERON, Assistant Secretary.

CONFERENCE OF THE SECRETARIES.

The chairman of the Conference of Secretaries and Editors, Dr. H. H. Whitcomb, announces the following to serve on the Executive Committee for this year: Drs. W. S. Wray, Chairman, Philadelphia; Joseph Scattergood, West Chester; C. F. McBurney, Altoona; H. W. Albertson, Scranton; and Scott M. Huff, Milesburg.

Secretaries and editors who wish to present papers at the next meeting are requested to send subjects to the chairman, Dr. H. H. Whitcomb, Norristown, at their earliest convenience.

J. T. B.

THE HARRISON ANTI-NARCOTIC LAW.

The JOURNAL has not been able to secure the full and exact data it would like to have secured regarding the regulations, as applied to physicians, of the Harrison Anti-Narcotic Law. It is evident that the law became effective before the department had time properly to make arrangements for its enforcement.

In our issue last month it was suggested that physicians send one dollar for one hundred blanks on which to write orders for drugs. So large a quantity will not be necessary for the great bulk of our physicians, and ten blanks can be purchased for ten cents. Those who have not already registered should send thirty-four cents for a registration fee, and ten cents for blanks, to the United States Internal Revenue Collector at Pittsburgh, Philadelphia or Lancaster. (See fourth page of cover of the February issue). Attention is also called to the editorial on page 911 of the *Journal of the American Medical Association* for March 13, and to Bulletin Excerpts in this issue.

Physicians will have no need to fear prosecution if they make a record of all habit-forming drugs on hand March 1, register, and also keep a record of narcotics dispensed. After a little, points which are now in controversy will be determined and physicians will be informed exactly what is required of them. The *Journal of the American Medical Association* "is endeavoring, by direct communication with the Commissioner, to secure official rulings on all points which have been raised. It is also taking steps to protect the interests of physicians by placing before the proper officials the point of view of the medical profession and the extent to which this law will affect physicians. As fast as official rulings can be secured, they will be given to the readers of *The Journal.*"

The editor recently addressed a letter to a physician who is familiar with narcotic legislation, and the reply is given herewith, though it was not written for publication.

I think there is much misapprehension and misconception on the part of physicians as to the extent to which this law will interfere with them personally. As far as reputable physicians are concerned, any annoyance which it may cause them is entirely incidental to the real objects of the law; *i. e.*, the law was not drafted and is not intended for the regulation of physicians. The fact that physicians are affected by it is only incidental.

The law which has just gone into effect is a third of a series of laws passed in accordance with our treaty obligations with practically all the other civilized countries in the world for the suppression of the opium traffic. The other two laws which were adopted over a year ago applied to importers and manufacturers, and as there probably are not more than half a dozen firms in the United States which import opium or cocain and few, if any, firms which manufacture it, the law affected very few people and gave rise to practically no discussion. This third law is intended to regulate traffic in habit-forming drugs from the time that they leave the hands of the importer until they come under state jurisdiction. Now, of course, the federal government has no power to interfere with traffic inside of state lines. Neither has it any power to restrict professional men in their work. Congress, as you remember, wanted to prohibit the use of white sulphur in making matches. This could have been done by the passage of state laws, but experience has shown that this is a very slow process and that, on account of lack of uniformity, the results are not satisfactory. Through agreement with the manufacturers who voluntarily offered to give up the use of white phosphorus, Congress passed what is known as the Esch Phosphorus Law, which does not prohibit the use of white phosphorus in making matches, but places such a heavy tax on them as to make it practically impossible to manufacture them. In other words, under the guise of a revenue measure, Congress has practically passed a prohibitive law. The same is true of this Harrison Law. After years of discussion, a measure has been passed, designed, under the pretext of levying a tax, to restrict the traffic in habit-forming drugs to legitimate channels; *i. e.*, only persons who are licensed can handle them and only persons who have a legitimate purpose in handling them can be licensed. The object of the law is not to annoy the doctor; it is to stamp out the underground traffic in this drug. If you have watched the newspapers, you have noticed that the government officers immediately started in raiding establishments in the disreputable parts of town where large quantities of opium, morphin and cocain had been stored. There have been such raids in New York, Philadelphia, Cleveland, Chicago, and elsewhere. This is what the law is intended to do and this is the reason why possession of the drug is made *prima facie* evidence of criminal intent.

In order to stamp out this illicit traffic, it is necessary to keep track of every particle of opium or cocain from the time that it is imported into this country until it reaches the ultimate consumer. This makes it necessary for each person handling these drugs legitimately to keep a record; otherwise, there is no way of detecting where the leaks are occurring. The physician's prescription must contain his office location and his registry number and his signature as well as the name of the patient. This is simply for purposes of identification. The doctor does not need to keep a copy of the prescription; the druggist does that. This is all that is necessary for the doctor who prescribes. If the doctor dispenses, then he must comply with the restrictions on a druggist; *i. e.*, he must keep a record of the drugs which he dispenses. These are the general principles. They are entirely for the protection of the public and the restriction of the use of habit-forming drugs to legitimate purposes. Exactly how these general principles will be applied to specific instances is not yet entirely worked out. Obviously the federal government will not attempt to apply or enforce any regulation that would be impossible or oppressive on its face. The government officials evidently are not expecting to antagonize the medical profession. Furthermore, it will probably be some time before they get to the point where they can give much attention to individual cases, so the doctor need not be uneasy. What they are likely to do is to start on the importing houses and trace down the large sales of opium and cocain and find out whether any quantity of these drugs is going into the hands of unlicensed persons. There is nothing in the law which is intended to interfere with the liberty of a physician to prescribe or to dispense such drugs as he may see fit. This is solely a matter of individual judgment. Both the prescribing and the dispensing must be matters of record and naturally the physician will be expected to justify his actions if necessary, but there is no restriction on the physician's liberty in this matter.

A most important point which has been entirely overlooked, however, is one which involves the sincerity and consistency of the medical profession. We have, as individuals and as a class, been preaching to the public for years the importance of public health legislation for the prevention of disease. Physicians have not realized it, but every one of these laws interferes in some way with the personal liberty of somebody. Whether they are compulsory vaccination laws, quarantine laws, pure food and drug laws, laws regulating the practice of medicine or what not, they all restrict individuals to some extent. This objection has repeatedly been made and our answer has always been that such restriction has been justified for the public good. This restriction may have been carried to extremes in some cases. For instance, in compulsory vaccination laws, parents are compelled to have their children vaccinated whether they wish it or approve of it or not. In medical school inspection laws, parents are compelled to have their children examined and sometimes operated on, while the most extreme illustration perhaps is found in the sterilization laws, which have been passed in a number of states, authorizing the state to perform a surgical operation and to deprive certain persons of all possibility of posterity. These laws have generally been supported by the medical profession on the ground that they were for the public good and for the improvement of the human race. This is all true and we believe it and we are perfectly honest and conscientious in asking for public support of these measures, but what would become of our consistency if we objected to the passage and the enforcement of a law imposing restrictions on physicians for the public good and for the elimination of the illicit use of habit-forming drugs? The law requiring physicians to keep a record of certain drugs dispensed causes some inconvenience, but not more than quarantine laws, vaccination laws and sterilization measures. The difference is principally that this law restricts us while the other laws restrict other people. If we expect the public to accept our protests of sincerity, then we must be willing to submit to the same amount of reasonable restriction for the public good that we ask others to accept.

S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the February JOURNAL was printed:—

ALLEGHENY COUNTY: *Transfer*—Frederick W. St. Clair to Indiana County Society. *Removal*—Otto C. Hagmeier from Pittsburgh to Reinholds (Lancaster Co.).

ARMSTRONG COUNTY: *New Members*—Laird F. Kroh, Yatesboro; James E. Quigley, Adrian.

BEAVER COUNTY: *New Members*—Andrew S. McKinley, Monaca; James Scroggs, Beaver. *No Longer Members*—Chalmers B. Moore, Jay D. Smith.

BERKS COUNTY: *New Members*—Ira J. Hain, Daniel E. Remsberg, Reading. *Resignation*—Leon C. Darrah. *Removal*—Isaac B. High from Reading to Shillington.

BLAIR COUNTY: *New Member*—Homer C. Miller, Altoona.

BUTLER COUNTY: *New Member*—Ralph Walker, Butler.

CAMBRIA COUNTY: *New Members*—Francis Albert Donlan, South Fork; Leo W. Hornick (by transfer from Philadelphia County Society), Robert M. Palmer, Johnstown.

CENTER COUNTY: *Removal*—P. H. Shelley from Hublersburg to Pleasant Gap.

CLINTON COUNTY: *New Member*—William P. Gillespie, Renovo. *Removal*—William G. Moorehouse from Renovo to Columbia (Lancaster Co.).

DAUPHIN COUNTY: *New Member*—Charles H. Crampton, Harrisburg.

DELAWARE COUNTY: *Resignation*—William A. Raiman.

ERIE COUNTY: *New Member*—Henry H. Foringer, Erie.

FRANKLIN COUNTY: *Death*—Paul P. Allen (Medico-Chirurgical Coll., '09) in Chambersburg, February 10, from pneumonia, aged 29. *No Longer a Member*—Edwin R. Vander Slice.

GREENE COUNTY: *Death*—John T. Iams (Bellevue Hosp. Med. Coll., New York City, '71) in Waynesburg, February 15, from heart disease, aged 69.

INDIANA COUNTY: *New Member*—Frederick W. St. Clair, Indiana (by transfer from Allegheny County Society). *Removals*—John C. Gourley and Ralph F. McHenry from Heilwood to Windber (Somerset Co.).

JEFFERSON COUNTY: *New Members*—Willis D. Hall, Wishaw; John A. Newcome, Vandergrift. *Removal*—Harry W. Allison from Worthville to Timblin.

LACKAWANNA COUNTY: *Death*—Alexander F. Gillis (Bellevue Hosp. Med. Coll., New York City, '76) in Carbondale, February 28, aged 61.

LANCASTER COUNTY: *Death*—Abram C. Treichler (Jefferson Med. Coll., '69) in Elizabethtown, March 1, from erysipelas, aged 71.

LAWRENCE COUNTY: *Removal*—Martin L. Ross from New Castle to West Chester (Chester Co.).

LEHIGH COUNTY: *New Member*—James H. Paul, West Auburn (Susquehanna Co.), (by transfer from Philadelphia County Society).

LUZERNE COUNTY: *New Members*—Erick Archibald Adams, Wilkes-Barre; Joseph C. Kochczynski, Hazleton. *Removal*—George L. Hoffman from Forty Fort to 1110 Wyoming Ave., Kingston.

MERCER COUNTY: *Death*—Thomas Elliott (Jefferson Med. Coll., '77) in Sharon, February 28, from blood poisoning contracted through a scratch on his right thumb while performing an operation, aged 65.

MONTGOMERY COUNTY: *Transfer*—Samuel Goldberg to Philadelphia County Society.

MONTOUR COUNTY: *New Member*—Edward B. Shellenberger, Danville (by transfer from Warren County Society).

NORTHAMPTON COUNTY: *New Member*—Harry C. Updegrove, Easton.

PERRY COUNTY: *Removal*—Arthur D. VanDyke from Elmira, N. Y., to Renovo (Clinton Co.).

PHILADELPHIA COUNTY: *New Members*—S. Harold Boyd, Charles H. Cloud, Walter Dick, Frederick J. Haerer, Samuel Goldberg (by transfer from Montgomery County Society), D. Howard Johnston, Ruth Alexander McKellar, A. Graeme Mitchell, Eugene C Murphy, Joseph M. Reeves, Clarence W. Schaeffer, John C. Simpson, William A. Swalm, Frederick J. Walter, Charles H. Willitts, Philadelphia. *Transfers*—Leo W. Hornick to Cambria County Society; James H. Paul to Lehigh County Society. *No Longer a Member*—Fred H. Klaer. *Deaths*—John L. Bromley (Univ. of Pennsylvania, '90) in Philadelphia, March 4, from heart disease, aged 46;

Richard Flavel Woods (Univ. of Pennsylvania, '95) in Philadelphia, February 10, aged 41. *Removals*—David N. Kremer from Philadelphia to 421 North Highland Ave., Pittsburgh (Allegheny Co.); Gottfried Metzler from Philadelphia to Ambler (Montgomery Co.); Marie A. Sexias from Philadelphia to Stop 17, Santures, San Juan, Porto Rico; Frederick C. Turnbull from Los Angeles, Cal., to Medical Building, Portland, Oregon.

TIOGA COUNTY: *Removal*—Edith Flower Wheeler from Mansfield to Gleason Sanitarium, Elmira, N. Y.

UNION COUNTY: *Removal*—Edith H. Matzke from Lewisburg to 805 East Seneca St., Ithaca, N. Y.

WARREN COUNTY: *Transfer*—Edward Shellenberger to Montour County Society.

YORK COUNTY: *New Member*—Clyde LeGrande Seitz, Glen Rock.

Present membership 6649. S.

PAYMENT OF PER CAPITA ASSESSMENT.

Since last public acknowledgement on pages 391 and 392, February issue, the per capita assessment for the sixteen months, September 1, 1914, to January 1, 1916, has been received from component county societies as follows:—

Feb. 17,	Dauphin	86-91	2415-2420	$16.50
Feb. 18,	Montour	13-14	2421-2422	5.50
	Bucks	46-54	2423-2431	24.75
	Lackawanna	1-23	2432-2454	63.25
	Dauphin	92	2455	2.75
	York	65-73	2456-2464	24.75
	Franklin	25-31	2465-2471	19.25
	Northumberland	41-49	2472-2480	24.75
Feb. 19.	Bedford	1-2	2481-2482	5.50
	Mercur	39-50	2483-2494	33.00
	Delaware	27-50	2495-2518	66.00
	Butler	1-21	2519-2539	57.75
	Luzerne	70-77	2540-2547	23.50
Feb. 20,	Lycoming	39, 40, 48	2548-2550	8.25
	Bedford	3	2551	2.75
Feb. 22,	Washington	51	2552	2.75
	Northampton	46-63	2553-2570	49.50
	Cambria	51-71	2571-2591	57.75
	Allegheny	69-122, 124-132, 134-168, 170-192, 194-213	2592-2732	387.75
Feb. 23,	Berks	70-72	2733-2735	8.25
	Clinton	13-14	2736-2737	5.00
	Blair	34-38	2738-2742	13.75
Feb. 24,	Cumberland	25-28	2743-2746	11.00
	Erie	43	2747	2.75
	Juniata	11	2748	2.75
Feb. 25,	Dauphin	93-102	2749-2758	27.50
	Armstrong	42-43	2759-2760	5.50
	Montour	15	2761	2.75
	Westmoreland	61-65	2762-2766	3.75
	Lancaster	56-70	2767-2781	41.25
Feb. 27,	Bedford	4	2782	2.75
Mar. 1,	Potter	21	2783	2.75
	Allegheny	214-217, 219-251	2784-2820	101.75
	Potter	20	2821	2.75
Mar. 2,	Adams	10-12	2822-2824	8.25
	Somerset	18-19	2825-2826	5.50
Mar. 3,	Potter	22	2827	2.75
	Beaver	25-29	2828-2832	13.75
Mar. 4,	Schuylkill	32-47	2833-2848	44.00
	Delaware	51-55	2849-2853	13.75
	Northampton	64-70	2854-2860	19.25
	Dauphin	103-109	2861-2867	19.25
	Lawrence	14-19	2868-2873	16.50
	Westmoreland	66-82	2874-2890	46.75
Mar. 5,	Luzerne	78-112	2891-2925	97.75
	Northumberland	50-54	2926-2930	13.75
Mar. 6,	Bucks	55-61	2931-2937	19.25
	Monroe	10-13	2938-2941	11.00
	York	74-90	2942-2958	46.75
	Carbon	1-22	2959-2980	60.50
Mar. 8,	Bedford	5	2981	2.75
	Columbia	29-32	2982-2985	11.00
	Snyder	14	2986	2.75
	Armstrong	44-50	2987-2993	19.25
	Clearfield	41-44	2994-2997	11.00
	Philadelphia	732-915	2998-3181	506.00
Mar. 9,	Huntingdon	4-7, 9, 20, 21, 23-27, 35, 36	3182-3195	38.50
	Cambria	72-80	3196-3204	24.75
Mar. 10,	Dauphin	110	3205	2.75
	Blair	39-47	3206-3214	24.75
	Cumberland	29	3215	2.75
	Clinton	16	3216	2.75
	Northampton	71-78	3217-3224	22.00
Mar. 11,	Montour	16	3225	2.75
	McKean	17-21	3226-3230	13.75
	Lehigh	47-63	3231-3247	46.75
	Warren	1-25, 27-39, 41-53	3248-3298	141.25
	Dauphin	111	3299	2.75
	Fayette	76-89	3300-3313	38.50
	Montgomery	43-62	3314-3333	55.00
Mar. 12,	McKean	22-25	3334-3337	11.00
	Erie	44-72	3338-3366	79.75
	Washington	52-86	3367-3401	96.25
	Greene	9, 17	3402-3403	5.50
	Franklin	32-35	3404-3407	11.00
Mar. 13,	Jefferson	30-46	3408-3424	46.75
	Perry	11-18	3425-3432	22.00
Mar. 15,	Elk	21-24	3433-3436	11.00
	Huntingdon	16, 34	3437-3438	5.50
	Lackawanna	24-72	3439-3487	134.75
	Bradford	25-32	3488-3495	22.00
	Dauphin	112-115	3496-3499	11.00
	Adams	13, 14	3500-3501	5.50
	York	91-94	3502-3505	11.00
	Delaware	56-61	3506-3511	16.50
	Berks	73-84	3512-3523	33.00
	Mercer	51-61	3524-3534	30.25
	Lycoming	49-74	3535-3560	71.50
	Wayne	23-30	3561-3568	20.50
	Bradford	33-36	3569-3572	11.00
	Columbia	33-36	3573-3576	11.00
	Northampton	79-86	3577-3584	22.00
	Monroe	14-16	3585-3587	8.25

C. L. STEVENS, Secretary.

STATE NEWS ITEMS.

BORN.

To Dr. and Mrs. William S. Piper, Clearfield, February 7, a son.

MARRIED.

Dr. Wallace Templeton Dodds and Miss Anna Jane Cote, both of Pittsburgh, March 16.

Dr. Frank Riegel Wentz, Allentown, and Miss Kathryn M. Shoemaker, Chestnut Hill, Philadelphia, February 20.

DIED.

Dr. Watson C. Hull (Geneva Med. Coll., '61) in Monroeton, February 18, aged 80.

Dr. John M. Gwinner (Univ. of Pennsylvania, '81) in Port Carbon, March 7, aged 58.

Dr. John J. McFadden (Jefferson Med. Coll., '88) in Philadelphia, February 11, aged 56.

Dr. David F. Swisher (Jefferson Med. Coll., '92) of Darby, in Philadelphia, March 2, of pneumonia, aged 41.

Dr. Dwight Reed (New York Univ., New York, '48) in Honesdale, February 19, from senile debility, aged 90.

Dr. Thomas Biddle, Jr., (Univ. of Pennsylvania, '76) in Philadelphia, February 19, from pneumonia, aged 61.

Dr. Truman Coates (Univ. of Wooster, Cleveland, '88) of Oxford, in Philadelphia, February 1, aged 63.

Dr. Thomas A. Gamble (American Univ. of Pennsylvania, Philadelphia, '73) in Troy, January 17, aged 70.

Dr. William O. Griggs (Jefferson Med. Coll., '66) in Philadelphia, February 21, from heart disease, aged 70.

Dr. James Calhoun Brobst (Bellevue Hospital Med. Coll., '67) in Lititz, February 15, from senile debility, aged 70.

Dr. Smith H. Armor (Homeopathic Med. Coll. of Pennsylvania, Philadelphia, '51) in Columbia, March 14, aged 91.

Dr. William T. Davies (Medico-Chirurgical Coll., Philadelphia, '97) on Mont Alto, March 3, from heart disease, aged 43.

Dr. Alexander McElroy Rea (Jefferson Med. Coll., '65) in West Middletown, February 2, from heart disease, aged 72.

Dr. Edward G. Husler (Jefferson Med. Coll., '81) of Carnegie, in Pittsburgh, February 14, from heart disease, aged 61.

Dr. Edwin C. Thompson (Western Reserve Univ., Cleveland, '85) in Slippery Rock, January 9, from pneumonia, aged 53.

Dr. Hugh Young Brady (Western Pennsylvania Med. Coll., Pittsburgh, '89) in Ohiopyle, February 14, from cerebral hemorrhage, aged 74.

Dr. William Shoemaker Reber (Univ. of Pennsylvania, '70) of Shoemakersville, in South St. Louis, March 1, from carbolic acid poisoning, apparently the result of an accident, aged 69.

ITEMS.

Dr. Samuel G. Dixon, Philadelphia, on March 1, completed ten years of service as Commissioner of Health of the State of Pennsylvania.

Dr. F. X. Dercum has been appointed consulting physician of the medical staff of the State Hospital for the Criminal Insane at Farview, Wayne County.

Dr. Aaron Brav, Philadelphia, has been appointed ophthalmologist to the Jewish Hospital to fill the position vacated recently by the death of Dr. Isaac Leopold.

Dr. Hugh H. Young of Johns Hopkins University addressed the Philadelphia Clinical Association, February 15, on "The Diagnosis and Treatment of Various Diseases of the Prostate."

Dr. Simon Flexner, New York City, of the Rockefeller Institute, addressed the Philadelphia Pediatric Society, February 9, on "The Etiology and Mode of Infection of Epidemic Poliomyelitis."

Dr. Daniel Webster Jefferis, Chester, was on March 11, tendered a complimentary banquet by the Delaware County Medical Society, in commemoration of his fiftieth anniversary as a practicing physician.

Hospital Ward for Drug Fiends. The Department of Health has opened a special ward at the Philadelphia General Hospital for the use of drug fiends, who, under the new law regulating the sale of drugs, are suddenly deprived of their drug.

Postgraduate Course in Pulmonary Diagnosis and Tuberculosis. The chiefs of staff of the tuberculosis department of the Philadelphia General Hospital will give a postgraduate course of daily instruction, except Saturdays and Sundays, April 12 to April 30, inclusive.

Medico-Chirurgical Alumni Association at its annual meeting elected the following officers: President, Dr. A. C. Morgan; vice presidents, Drs. D. J. Monihan of Chester, Frederick E. Ward of Easton, and Frank Sheppard; secretary, Dr. E. H. Erney; and treasurer, Dr. J. A. Brophy.

Dedicate a County Society Home. The Berks County Medical Society will celebrate the taking over of their new home at Reading at 2 P.M., April 13. A special program has been prepared for the occasion, and all the members of the state society are cordially invited to be present.

The Graduates of the Jefferson Medical College residing in Western Pennsylvania will hold their annual banquet on Friday evening, March 26, at the Fort Pitt Hotel, Pittsburgh. Prof. J. Chalmers DaCosta will give a clinic at the Mercy Hospital in the afternoon, and appear as honor guest at the banquet.

Destroy Patent Remedy. More than 4000 bottles of "Father John's Medicine," seized by the Government in Philadelphia in 1912 on a charge that they were misbranded and misled the public, were condemned and ordered destroyed, February 19, under a decree filed in the United States District Court.

The Episcopal Hospital and St. Timothy's Hospital, Philadelphia, each receives $1000 by the will of the late Dr. John L. Bromley, the same to be used for the eye department. Dr. Bromley also left $10,000 to Dr. Howard C. Clymer, to be used according to confidential instructions previously given Dr. Clymer.

Bequests. The Chester Hospital is bequeathed $5000, together with the residuary estate, by the will of the late Marietta Flower of Chester. Also by her death the hospital will come into possession of the estate of her brother, amounting to $150,000. Children's Aid Society of Philadelphia is bequeathed $1000 by the will of Mrs. Harriet Morgan Frazier.

White Haven Sanatorium Association. At the annual meeting at Philadelphia, March 8, Dr. Lawrence F. Flick and the other officers, whose term had expired, were reëlected. Announcement was made that forty beds installed a year ago at the Jefferson Hospital for destitute tuberculosis sufferers which the association decided to discontinue because of lack of funds would be provided for by the hospital authorities.

The Ninth Weir Mitchell Lecture, February 16, at the College of Physicians of Philadelphia, by Dr. C. Wardell Stiles of the Rockefeller Hookworm Commission, dealt largely with the hookworm, and he based his remarks on photographs he had taken of filthy living conditions in the South. He said that he believed physicians should do more to cultivate the prevention of disease rather than putting all their efforts to its cure. Especially, he said, should sanitation and cleanliness be taught in the schools.

Philadelphia Alumni Society of the Medical Department, University of Pennsylvania, at its annual meeting, voted to increase the Dr. Roland G.

Curtin Scholarship Memorial Fund, with $250 of last year's surplus. Officers were elected as follows: President, Dr. W. D. Robinson; honorary vice president, Dr. E. F. Smith; vice presidents, Drs. H. A. Sutton, W. F. Guilfoyle and J. A. Kelley; corresponding secretary, Dr. B. F. Stahl; recording secretary, Dr. J. M. Griscom, and treasurer, Dr. M. B. Miller.

The Federated Medical Council, which is composed of Dr. Samuel McC. Hamill, chairman; Dr. William N. Bradley, secretary, and Drs. Howard C. Carpenter, Charles A. E. Codman, Charles A. Fife, C. Lincoln Furbush, J. Claxton Gittings, Howard Kennedy Hill, Henry D. Jump, William D. Robinson and John F. Sinclair, has prepared twenty timely health talks to be printed in as many different languages and pasted on 300 bulletin boards erected by the child federation in courts and alleys of the most congested housing districts of Philadelphia.

GENERAL NEWS ITEMS.

Surgeon-General Gorgas has been promoted to the rank of Major-General in recognition of his work in the sanitation of the Canal Zone.

Home for Lepers. On February 24 the House of Representatives passed a bill authorizing the establishment of a home for lepers under the United States Public Health Service. The bill is now before the Senate.

Council on Pharmacy and Chemistry. During February the following articles were accepted for inclusion with New and Nonofficial Remedies: Cholera serobacterin, meningo serobacterin, typho serobacterin, mixed, H. K. Mulford Company.

The Samuel D. Gross Prize of the Philadelphia Academy of Surgery for the year 1915, has been awarded to Dr. John Lawrence Yates, Milwaukee, Wis., for his essay entitled "Surgery in the Treatment of Hodgkin's Disease." The prize is valued at $1500.

The American Association of Pathologists and Bacteriologists will meet in St. Louis, April 2-3, in the Pathological Department of the Washington University Medical School and in the library of the St. Louis University. Preceding these meetings on April 1, the annual meeting of the American Association for Cancer Research and the annual meeting of the International Association of Medical Museums will be held in the Laboratories of the Washington University Medical School.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession, up to and including the week ending March 6, 1915.

Contributions:—

Receipts previously reported	$2528.00
Dr. O. O. Cooper, Hinton, W. Va.,	10.00
Dr. F. A. Dodge, Le Sueur, Minn.,	10.00
Dr. Alfred A. Herzfeld, New York, N. Y.,	10.00
Dr. A. W. Sieker, Plymouth, Wis.,	5.00
Dr. Charles H. Cargile, Bentonville, Ark.,	10.00
Dr. A. A. Bornscheuer, Pittsburgh,	2.00
Dr. Lyn Waller Deichler, Philadephia,	5.00
Dr. H. T. Goodwin, New York, N. Y.,	5.00
Dr. Henry S. Weigle, Muncy,	5.00
Dr. James S. Keyes, Brooklyn, N. Y.,	5.00
Dr. J. I. Johnston, Pittsburgh,	15.00
Dr. Frederick J. Resseguie, Saratoga Springs, N. Y.	10.00
Dr. Frank H. Jackson, Houlton, Me.,	5.00
Dr. Howard L. Frost, Cleveland, Ohio,	10.00
Dr. P. St. L. Moncure, Norfolk, Va.,	5.00
Dr. A. J. Braden, Duluth, Minn.,	5.00
Dr. Wendell C. Phillips, New York, N. Y.,	75.00
Dr. Russell S. Fowler, Brooklyn, N. Y.,	25.00
Dr. John W. Farlow, Boston, Mass.,	25.00
Dr. E. W. Link, Palestine, Texas,	10.00
Dr. H. R. Link, Palestine, Texas,	5.00
Dr. H. Gifford, Omaha, Neb.,	100.00
Jefferson Co. Med. Society, Birmingham, Ala.,	50.00
Dr. Edgar R. McGuire, Buffalo, N. Y.,	10.00
Dr. Max Einhorn, New York, N. Y.,	25.00
Dr. Joseph L. Miller, Thomas, W. Va.,	10.00
Dr. David Chester Brown, Danbury, Conn.,	10.00
Oshkosh Medical Club, Oshkosh, Wis.,	50.00
Dr. George M. Dill, Prescott, Wis.,	1.00
Camden Co. Medical Society, Camden, N. J.,	50.00
Dr. Joseph Walsh, Philadelphia,	10.00
Dr. L. B. Pilsbury, Lincoln, Nebr.,	5.00
Dr. E. E. Montgomery, Philadelphia,	25.00
Dr. J. T. Clegg, Siloam Springs, Ark.,	1.00
Dr. K. B. Huffman, Bentonville, Ark.,	1.00
Dr. Sylvester McNamara, Brooklyn, N. Y.,	5.00
Dr. J. Watanabe, Seattle, Wash.,	5.00
Anonymous—B, Pittsburgh,	30.00
The Erie County Medical Soc., Erie,	25.00
Dr. Hugh Cabot, Boston, Mass.,	25.00
Dr. E. Evans, LaCrosse, Wis.,	10.00
Dr. W. J. Herrington, Bad Axe, Mich.,	10.00
Otero Co. Medical Society, La Junta, Colo.,	25.00
Vermilion Co. Medical Soc., Danville, Ill.,	25.00
Dr. Eva Charlotte Reid, San Francisco, Cal.,	5.00
Dr. Howard Carter, Webster Groves, Mo.,	5.00
Dr. G. H. Torney, Brookline, Mass.,	5.00
Dr. John B. Murphy, Chicago, Ill.,	100.00
Dr. D. E. McGillivray, Port Angeles, Wash.,	5.00
Dr. Charles N. Spratt, Minneapolis, Minn.,	100.00
Dr. J. M. Thorne, Pittsburgh,	5.00
Westerly Physician's Assoc., Westerly, R. I.,	10.00
Dr. J. P. Long, Chicago, Ill.,	1.00
Dr. Roy Sexton, Streator, Ill.,	5.00
Dr. D. E. Cornwall, St. Maries, Idaho,	5.00
Aesculapian Club of Buffalo, Buffalo, N. Y.,	25.00
Pocatello Medical Society, Pocatello, Idaho,	10.00
Dr. A. R. Thomas, West Eaton, N. Y.,	5.00
The Monmouth Medical Club, Monmouth, Ill.,	10.00
The Adams Co. Med. Soc., Quincy, Ill.,	42.00
Dr. Charles H. Smith, Uniontown,	25.00
Dr. Frederick J. Walter, Daytona, Fla.,	10.00
Dr. Austin C. Brant, Canton, Ohio,	5.00
Dr. William D. Byrne, Chicago, Ill.,	5.00
Dr. Simon Levin, Lake Linden, Mich.,	5.00
Dr. Miles F. Porter, Fort Wayne, Ind.,	5.00
Dr. J. B. Duncan, Pittsburgh,	10.00
Dr. J. M. Patton, Vandergrift,	1.00
Dr. N. B. Williams, Perkasie,	1.00
Dr. Wilson F. Phillips, Dorchester, Mass.,	5.00
Dr. Donald C. Balfour, Rochester, Minn.,	25.00
Dr. Austin Flint, Jr., New York, N. Y.,	25.00
Dr. Evan T. Steadman, Hoboken, N. J.,	10.00
Dr. John B. Nichols, Washington, D. C.,	10.00
Dr. Hermann G. Klotz, New York, N. Y.,	5.00
Dr. George P. Coopernail, Bedford, N. Y.,	5.00
Dr. K. I. Sanes, Pittsburgh,	25.00
Dr. Herman F. Vickery, Boston, Mass.,	25.00
Dr. H. H. Atkinson, Fordyce, Ark.,	5.00
Dr. Archibald MacLaren, St. Paul, Minn.,	25.00
Dr. Helen G. Putnam, Providence, R. I.,	5.00
Maricopa Co. Med. Society, Phoenix, Ariz.,	25.00
Dr. J. D. S. Davis, Birmingham, Ala.,	5.00
Dr. J. M. Popp, New Castle,	5.00
Dr. Horace Binney, Boston, Mass.,	5.00
Dr. Warren Wilson, Northfield, Minn.,	5.00
Dr. Gibbs Biscoe, Pendleton, Ark.,	5.00
Dr. Eleanore Boulton, Philadelphia,	5.00
Dr. O. L. Perry, Elkins, W. Va.,	2.00

Dr. John P. Getter, Belleville,	2.00
Dr. W. H. Witt, Nashville, Tenn.,	5.00
Salt Lake Co. Med. Soc., Salt Lake City, Utah,	50.00
New York Medical Union, New York, N. Y.,	100.00
The Montgomery Co. Med. Soc., Dayton, Ohio,	304.50
Dr. Grace Wolcott, Boston, Mass.,	10.00
Dr. Harold E. Perry, New Bedford, Mass.,	10.00
Pittsburgh College of Physicians, Pittsburgh,	45.00
Dr. Daniel R. Robert, Brooklyn, N. Y.,	5.00
Mrs. Charles E. Paddock, Chicago, Ill.,	5.00
Dr. Chas. S. Wright, Acting Asst. Surg., U.S. A., Portland, Me.,	5.00
Dr. E. C. S. Taliaferro, Norfolk, Va.,	30.00
Dr. William H. Wilder, Chicago, Ill.,	25.00
The Thunder Bay Med. Soc., Ontario, Canada,	25.00
Garland Co.. Hot Springs Medical Society, Hot Springs, Ark.,	25.00
Dr. J. Shelton Horsley, Richmond, Va.,	5.00
Dr. E. F. Dodds, Missoula, Mont.,	5.00
Dr. George R. Little, Wichita, Kansas,	25.00
Dr. James A. Jackson, Madison, Wis.,	5.00

Total receipts	$4611.50
Disbursements:—	
Previously reported	$2530.00
During week ending Feb. 13 (275 boxes at $2.20)	605.00
During week ending Feb. 20 (200 boxes at $2.20)	440.00
During week ending Feb. 27 (352 boxes at $2.30)	809.60
During week ending March 6 (100 boxes at $2.30)	230.00
Total disbursements	$4614.60
Deficit	3.10

F. F. Simpson, M.D., Treasurer,
7048 Jenkins Arcade Bldg., Pittsburgh.

BULLETIN EXCERPTS.

Bulletin, Allegheny.

Treasury Department, Office of Internal Revenue.
Pittsburgh, February 27, 1915.

To Parties Concerned:

The following instructions and rulings of the Department at Washington are forwarded to you for your information and guidance:—

Only such persons who are legitimately engaged in manufacture, importing, selling, or dispensing the drugs coming within the scope of the Harrison Anti-Narcotic Law and who have an established place of business are entitled to register. This necessarily excludes consumers of these drugs and persons other than those specifically referred to in Section 1 of the law.

Interns and nurses in hospitals are not required to register. See Section 8 of the law. The law does not contemplate the registration of nurses, and such persons can only obtain their supply of these drugs through a properly prepared prescription issued by a duly registered physician.

Where a person changes his place of business within the confines of a collection district, such change must be recorded in the collector's office, the same as is done to other special tax stamps. Should the person remove to another collection district, it would be necessary for him to reregister with the collector of that district.

Officers of a state, county or municipal hospital, or prison, are not required to register under the provisions of the Harrison Act when performing duties solely in connection with such institutions, but where such officers or physicians have an outside private practice, it will be necessary for them to register and pay the special tax.

Druggists who sell at wholesale and retail must register in both capacities. For the purpose of enforcing the Harrison Act, persons selling through or to dealers will be regarded as wholesale dealers, and those persons selling directly to physicians or dispensing on physicians' prescriptions will be regarded as retail dealers. A druggist making an accommodation sale to another druggist, will be regarded as a retail dealer.

In signing prescriptions, a physician may sign his name as he would on a legal document or on a check, e. g., "J. H. Jones," or "John H. Jones," or "John Henry Jones," as the case may be. Where a physician personally visits a patient and administers any of the drugs coming within the scope of the Harrison Act, he is not required to keep a record of such administration, but where he leaves a supply of any of the drugs or preparations to be taken by the patient in the physician's absence, he will be required to keep a record of such drug or preparation, the same as he would in his office. A physician must keep a record of all drugs or preparations dispensed or distributed in his office, whether administered personally or given to the patient to be carried away with him.

Very truly yours,
C. G. Lewellyn, Collector.

Bulletin, Montgomery.

President Hubley is delivering the "goods." He meets with his committees and his committees meet with him. There never was such a banqueting time as the present program committee has been up against—results, full programs, full meetings, full members.

It is a significant fact that of the dozen or so members who were present at the stated time of the last meeting, two-thirds were from out of town - not only out of town, but from Royersford, Wayne, Phoenixville, Mont Clare, Jenkintown, Wyncote, Collegeville, etc. These men came from a distance—took the trouble to be there on time—then had to wait for the town members to arrive later. If Graber, Brown, O'Neal, Elmer, Dedaker, Jameson, Bower, Neiffer, etc., can arrive at the meetings on time, surely our town members should give a little more consideration to being prompt so that the meetings can be started with a full attendance. If you intend coming, why not be on time?

Weekly Roster, Philadelphia.

Hospital Physicians and the Harrison Act.

Through the courtesy of Dr. Joseph Walsh the *Roster* prints the following interpretation from the Philadelphia head of the Internal Revenue Department: –

February 13, 1915.

To Whom it May Concern: I have received the following instructions from the Honorable Commissioner of Internal Revenue:

For the purpose of enforcing the provisions of the Anti-Narcotic Law a hospital will be considered as a person, and the same regulations governing a physician, as to the keeping of records of drugs dispensed or distributed, will apply to such institutions.

A physician is not required to keep a record of drugs dispensed or distributed when making a personal visit on a patient. When visiting a patient in a hospital a physician would be considered as making a personal visit and if he dispenses or distributes any drugs to such patient while in the hospital he would not be required to keep a record of such drugs. On the other hand the hospital being considered as a person must keep a record of such drugs dispensed or distributed to any patient in the hospital, such record showing the date when any such drug is dispensed or distributed, the kind and quantity dispensed or distributed in each case, and the name and residence of each patient to whom such drug was dispensed or distributed, and such record must be preserved for a period of two years from the date of dispensing or distributing for inspection by a government officer.

It would seem, therefore, that a hospital in order to keep such record, must formulate rules and regulations of its own making it necessary for a nurse or attendant to enter in a book, or report daily to the pharmacist in charge of such drugs, the information required to be obtained for such inspection.

A visiting physician, attending a patient in a hospital, should be required by the hospital authorities, when prescribing any drug falling with the scope of this law, to place his initials on the chart or medicine sheet, immediately after the drug prescribed, which will enable the supervising nurse in each ward or operating room to furnish the pharmacist the information necessary for the hospital to record.

The above requirements do not apply to government, state, county, or municipal hospitals, established and maintained solely as such, or to the Public Health Service. Respectfully, Ephraim Lederer, Collector.

Unjust State Society Dues By-Law. The attention of members of the Philadelphia County Medical Society who have not already paid their dues for the year 1915 is called to the change in the by-laws of the Medical Society of the State of Pennsylvania whereby it is necessary for the members of this society, in order to be in good standing in the former society, to have paid their dues on or before March 28. For further enlightenment, consult the editorial in the Pennsylvania Medical Journal for February. As is well known, the state society, at the meeting in Pittsburgh, changed the by-laws, by which it attempts to make the local secretaries collecting agents for the state society. This the secretary of the Philadelphia County Society has refused to do as he is under bond to turn over the dues of this society to its treasurer. This dubious action of the state society may antagonize a number of members, especially those whose names do not appear in the Journal for April. Might it not be well, to relieve the situation, to have a plan somewhat like the American Medical Association by which each member of a county society is *per se* a member of the state society but, if desirous to have an active participation in the proceedings, an additional charge should be made and let him or her then be termed a "fellow"? The charge of two dollars and seventy-five cents made on Philadelphia members for the sixteen months, up until January, 1916, would be a heavy drain on this society if it were not for the fact that it has been paying for its members as of August 31st in advance.

ANTISEPTIC FOOT POWDER.

℞ Oil of eucalyptus,	fʒij.
Salicylic acid,	
Powdered zinc oleate, of each,	℥j.
Powdered boric acid,	℥x.
Powdered French chalk,	℥xij.

Mix. (Med. Summary.)

SOCIETIES.

THE PITTSBURGH NEUROLOGICAL SOCIETY.

Meeting of January 16, Dr. T. M. T. McKennan, president.

Unusual Cord Disease. Brief case reports of three patients were presented by Dr. George J. Wright. The first case was that of a woman, aged thirty-five, who gave a history of gradually increasing muscular weakness, equivalent to a paralysis, affecting the whole body. The trouble was first noticed in September, 1913, and progressed until the present time, the patient becoming completely bedridden in February, 1914. The family history was negative; the previous history, except for an attack of typhoid ten years ago, was also negative. As a book-keeper the patient was a high-strung intensive worker. Examination showed extreme muscular weakness of the flaccid type, associated with wasting and involving all four extremities, the trunk, and the neck. There was some difficulty in swallowing at times, but no speech defect and no mental disturbances. Muscular twitchings were not noted. Sensation was normal. It was held that the diagnosis of progressive spinal muscular atrophy offered no difficulties.

The second case reported was that of a woman, aged forty-eight, who was first seen at the St. Francis hospital in October, 1913. She was admitted complaining of general nervousness affecting chiefly the throat, so that she had difficulty in talking and swallowing. This trouble began in June, 1913, and was associated with headaches, ringing of the ears, and "spells" of palpitation of the heart. In the hospital it was noted that the patient had some slight difficulty in swallowing, had a peculiar weak whining voice, and that the face was usually set in a half-smiling, half-weeping fashion. The tongue was heavily coated and showed marked fibrillary tremors, but was not wasted. Examination elsewhere was practically negative, except that all the tendon reflexes were exaggerated, without, however, a clonus or a Babinski. The spinal fluid was negative. The patient showed various delusions of a persecutory nature. In November, 1913, the patient left the hospital, but returned in December, 1914, and was placed in the psychopathic ward because of the prominence of the mental symptoms. She had at times been maniacal and suicidal, and showed delusions of persecution. Examination at this time showed that speech was impossible, swallowing almost so. The tongue was markedly wasted and showed fibrillary tremors. The muscles of the shoulders, arms, forearms and hands revealed weakness, wasting, fibrillary twitchings and exaggerated reflexes. The left arm and hand showed contractures. The legs were weak, only slightly wasted, showed no tremors, but the tendo-Achilles, and patellar reflexes were exaggerated. There was, however, no clonus or Babinski. Sensation was normal. There was no bladder or rectal disturbance. This case was presented as a somewhat unusual type of amyotrophic lateral sclerosis because of the early appearance of the bulbar symptoms and the prominence of the mental disturbance.

The third case was that of a boy, aged twenty-two, who was admitted to St. Francis hospital November, 1914, complaining of general muscular weakness of the arms and legs and marked difficulty in speech. The family history as regards nervous disease was doubtful. One cousin had what was thought to be St. Vitus dance; a second cousin was thought to have the same trouble as this patient. The present condition was traced to the age of six when the patient was injured in a bicycle accident, after which he began to complain of a progressive loss of strength in the legs. He became so weak that he staggered in walking. Six years ago walking became impossible, and at this time the arm also became affected so that now, because of weakness and incoördination, he is unable to feed himself. At the age of eleven speech and swallowing became difficult and at the age of seventeen a brace was fitted to the spine because of an extreme lateral curvature. There has been up to the present time much headache and backache, also sharp, shooting intermittent pains in the arms and legs.

The examination of this patient revealed marked bulbar speech and uncontrollable laughter. The tongue showed no wasting or tremor. The eyes were normal. The muscles of the upper extremity did not show any definite wasting, although the power was weaker than normal. The lower extremities were poorly developed, resembling that of a boy of ten years, small but well rounded. There was no real atrophy. Voluntary movement of the legs was practically impossible; movement of the arms was jerky and incoördinate. The spine showed a marked scoliosis. The sensation for pain, touch, and temperature was normal. The tendon reflexes were absent. There was no bladder or rectal disturbance. The spinal fluid was negative. The case offered difficulties in diagnosis and, in spite of the absence of the characteristic sensory disturbances, syringomyelia was considered as a possibility, and perhaps Fredreich's ataxia.

Dr. Diller, in whose service at the St. Francis hospital these three cases had come, said in discussion that he desired to call attention to the rather rapid and complete progress of the muscular atrophy in the first case, without the appearance of bulbar symptoms and without the presence of muscular twitchings. The second case was marked by the onset with bulbar symptoms and the presence of decided mental disturbance from the beginning which he was at a loss to explain. He called attention to the fact that the Wassermann and spinal fluid were negative, as it has been claimed by one well known authority that amyotrophic lateral sclerosis is probably a disease on a luetic basis. As for the third case he did not feel sure of the diagnosis, but believed the early onset, the bulbar symptoms and the scoliosis, in spite of the absence of sensory changes, argued for syringomyelia.

Epidemic Cerebrospinal Meningitis. Drs. Koenig and Moyer reported in detail a typical case. The onset was gradual with the final development of high fever, delirium, rigidity and the characteristic cloudy spinal fluid with the presence of the specific microörganism. The case was presented as indicating the results of patient, thorough treatment. In all, nine injections of serum were given and, finally, when the temperature persisted in spite of the fact that the spinal fluid was practically clear and free from microörganisms, the spinal fluid was completely drained away and the canal washed with 30 c.c. of normal salt solution. An injection of the serum was also given intravenously. Following this the temperature fell to normal and the patient made an uneventful recovery, except for the development of an urticaria.

Head Injury with a Late Development of Meningismus. Drs. Koenig and Moyer also reported this case. As a result of a street-car accident the patient was admitted to the hospital showing excitement, confusion, and delirium. Examination was negative except for somewhat rigid pupils and exaggerated knee jerks. In a few days the patient's mind began to clear up, but he showed total amnesia for the period of the accident. After one week in the hospital and following shortly a lumbar puncture, which was practically negative, the patient developed a severe headache and a temperature of 103°, and the following day stiffness of the neck and a typical Kernig. The leukocyte count was 13,000. A second lumbar puncture was made and seventeen cells found, ten being large endothelials. No microörganisms were found. In a few days, however, these symptoms subsided and the patient made a perfect recovery without further treatment.

Dr. Diller, in a discussion, paid tribute to Dr. Moyer for his extreme care and good judgment in the treatment of the patient with meningitis; this patient was seriously and apparently hopelessly ill. The second case he considered one of acute traumatic psychosis with amnesia, and thought perhaps the symptoms of serous meningitis might have been due to the lumbar puncture.

Dr. Moyer said that possibly the signs of meningeal irritation were due to the lumbar puncture, although he did not know. A large needle was used. No polymorphonuclears were found, only large mononuclears and lymphocytes. The first count was twelve, the second seventeen. He has noted this increase in cells when, other things being equal, lumbar punctures closely follow each other.

Dr. Paul Weston made a plea for early lumbar punctures in all suspicious cases as a diagnostic measure. He related his experience in Philadelphia during the epidemic of 1907. He remembered two patients, both having been exposed; one showed definite symptoms and a positive spinal fluid, the other showed no symptoms clinically and yet the spinal fluid showed the diplococcus. Early treatment in this latter case was of course instituted and prevented untoward results.

Dr. Mayer said that he did not favor spinal punctures in head injuries as he believed them irritating. As regards the irritative symptoms in the case of head injury reported, he believed them due to a serous meningitis of mild type with an early recovery due to prompt absorption of the serum. He objected to the use of the term "meningismus," as he said it was now held this was really due to a serous meningitis.

The Value of the Colloidal Gold Test in Psychiatry. Dr. Ira Darling and Dr. Paul Weston of the Warren State Hospital read this paper, basing their results on a very considerable and excellent recent experience. The principles of the test were laid down by Zeigmondy. He found that gold would be precipitated from a colloidal suspension by electrolytes and that some other colloids would prevent this precipitation. Lange applied this principle in the examination of the spinal fluid. He found that the colloid (protein) in spinal fluid, in cases of general paralysis and cerebrospinal syphilis, not only did not prevent but actually caused precipitation, and that in paresis the precipitation took place in certain dilutions of the spinal fluid. In cerebrospinal syphilis the precipitation was not so characteristic. Dr. Darling and Dr. Weston quoted various papers showing that the results in cerebrospinal syphilis were not always constant but that in paresis the results all agreed: namely a precipitation in the first three to six or seven tubes. They presented charts showing typical paretic and cerebrospinal syphilis curves and reported on 239 reactions on 198 cases as follows: 3 cases of cerebrospinal syphilis, 6 tests; 34 cases of general paralysis, 63 tests; 98 cases of dementia præcox, 100 tests; 25 manic depressive cases, 27 tests; 12 epileptics, 12 tests; 17 arteriorsclerotic cases, 18 tests; 9 unclassified cases, 13 tests.

In all the cases a cell count, Wassermann, globulin and albumin tests were made in addition to the "gold sol."

The authors concluded that the test is of great value as an adjutant to the Wassermann reaction. That a precipitation in the paretic zone is apparently of as much significance as a positive Wassermann reaction. That its value in differentiating between paresis and cerebrospinal syphilis is questionable until more work has been reported.

Dr. Haythorne in discussion said that he had not had sufficient experience with the test to feel sure of his ground. As pathologist to a general hospital he had not had an opportunity to test many cases. At first he got many negative reactions, but lately has taken up the work more seriously. He feels there is great difficulty in reading the reaction properly and believes there will have to be many honest reports before the real value of the test can be known.

Dr. Moyer had had only a limited experience and so far because of the difficulties in the technic did not feel warranted in using it in routine work until the real value of the test had been shown.

Dr. Mayer wanted to know whether tests had been made before and after the Swift-Ellis treatments, as he had understood that there was no change in the reaction in spite of what the Wassermann might be.

Dr. Darling, answering Dr. Mayer, said, in the experience they had, no tests had been made both before and after the Swift-Ellis treatment, but in eight or nine cases tests had been made after treatments, and no change had been noted in the colloidal gold test.

Dr. Richardson wanted to know whether provocative doses of salvarsan had been given in the negative cases.

Dr. Darling answered this in the negative.

Dr. Weston, in closing the discussion, emphasized the necessity for an exact technic and said many of the difficulties were due to the slightest faults, as the test is exquisitely delicate. The gold must be absolutely free from contamination, must not show the slightest tinge of blue, and must be exact in amount as determined by titration.

Commitment of Insane. Dr. McKennan reported an experience he and Dr. Diller had recently in testifying in the defense of two physicians who were sued for certifying to the supposed insanity of a certain patient. The commitment was signed in 1908; in 1910 a voluntary non-suit was granted; in 1914 another trial was held. The whole thing from a legal standpoint hinged on whether malice could be proved. The judge was extremely fair, but the trial was notable in Dr. McKennan's opinion because of the mass of evidence presented, the delight of certain people in seeing physicians in trouble, and the amount of trouble two honest physicians could get into as a result of our present form of commitment of the insane. Our law as it stands, works an unnecessary hardship on physicians.

Dr. Diller spoke of how fair the judge was and how much his honest grasp of the situation had to do with the favorable outcome. The case was an ugly one because the patient evidently had suffered from an aggravated attack of hysteria, and so it was hard to say in a general way that she was insane. But fortunately from the nature of this particular case he and Dr. McKennan were able so to testify. In Dr. Diller's opinion, when all the trouble these two doctors had was considered, the lesson was clear; there ought to be some change or amendment to our present law so that the responsibility in these commitments might not rest wholly on the doctors.

George J. Wright, Secretary.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of November 10, 1914, Dr. William Zentmayer, Chairman.

A Contracted Socket Enlarged by the Method of Maxwell. Dr. Burton Chance exhibited a contracted socket enlarged by the method of Maxwell, of Dublin. The patient, a woman of fifty-eight years, had had her left eye removed many years after a severe injury. She has been under observation interruptedly for fifteen years. After a lapse of several years and within the past year, she reported because the socket had contracted so much that no sort of eyeball could be held in place. Two dense, pillar-like bands connected the upper and lower mucous surfaces. These were bisected in the manner devised by Dr. Berens, and this procedure deepened the space somewhat. Six months later, an island of tissues from the lower lid was implanted into the socket through an incised space connecting the orbital sulcus with the skin of the lower lid. The socket was thus enlarged to a degree equal to the area of the transplanted skin. A paraffin-covered lead plate was inserted, and worn continuously. The four sutures from the socket and the five from the external surface of the lid were removed on the seventh day. The union of the lid was all that could be wished for. The lid was no longer drawn into the orbit, and a modified glass eye was worn for two weeks, when it had to be removed because a sinus had formed at the anterior line of union of the skin and mucous membrane, through which the discharges burrowed and pointed on the outer surface of the lid. This was healed, and a somewhat larger shell can now be worn. Further operations are intended, to widen the space under the upper lid.

Divergent Strabismus. Dr. Chance exhibited a case showing the result of straightening a widely divergent eye by means of the excision of conjunctocapsular tissue and the tenotomy of the opposite rectus muscle. The divergence was secondary to a complete tenotomy many years previous to her coming under Dr. Chance's observation. The eye was also practically sightless from extensive atrophy of the choroid. The operative procedures consisted in the excision of an elliptical area of conjunctival and capsular tissues down to the sclera. The tissues were grasped in a quite wide fold within the jaws of a crutch-head shaped forceps. The surrounding tissues were loosened, and edges were then united by four sutures. The external rectus was afterwards completely tenotomized. Reaction was but slight, and sutures were removed on seventh day. Result was perfect.

Raising of the Upper Lid, Associated with Abduction. Dr. Chance exhibited, also, a man with paresis of the external rectus muscle. In this case, when efforts at abduction were made, the fissure became much wider, through contraction of the levator. Diplopia, due to paresis of the right externus, had come on suddenly, three years before. A remission had taken place after a few months, followed by a recurrence a year later; and these symptoms have persisted ever since. The diplopia was homonymous, most pronounced for far-distant objects. The man, whose age is forty-two, could read easily at close range. There were no evidences of internal paresis. Fundi were healthy, visual acuity for each eye equaling 5/7.5.

The brows had become elevated, which could be verified by comparisons with early photographs. There was an esotropia of ten degrees. Ocular movements of each eye separately were complete, except that outward and upward rotations were slower in right than in left eye. When the right globe reached the median line, the upper lid perceptibly uncovered the cornea; and when it reached the outermost limit, the fissure became greatly widened. There was neither ptosis nor retraction of the globe. All signs have become less since patient has taken progressive doses of sodium iodid. He assigns the causation of the symptoms to a shocking grief. He has several children, and denies specific infection.

Dr. Zentmayer said that he had done this ingenious operation of Maxwell several times, and always with the happiest results, so far as he had been able to follow cases. It can, he stated, be done for restoration of the superior cul-de-sac also. He performed it once for that purpose, but found it more difficult than for the inferior; as one must take care of the tendon of the levator, which is detached by the incision through the lid. A temporary ectropion sometimes results. After operating upon the inferior cul-de-sac, this may be avoided by making the elliptical piece of skin narrower than is usually advised.

Dr. Posey said he had performed the Maxwell operation in two cases, having been led to adopt it at the instance of Mr. E. Treacher Collins. Deformity was perfectly overcome in each instance. Dr. Posey considered the operation comparatively simple. He also commended the Wiener procedure, but preferred the method of Weeks in all cases in which the socket is contracted *ad maximum*. He had found the method devised by Berens, that of dividing and utilizing cicatricial bands, of much service in many cases of slight contraction.

Congenital Aniridia. Dr. S. D. Risley presented a case. The defect had been traced through four generations of an unusually prolific family. In 117 descendants, with 234 eyes, there were 217 eyes with aniridia. Of the remaining 17 eyes, 2 were known to have had cataract: and nothing was known concerning the remaining 15. In the case presented, there was not only aniridia, but also aphakia and detachment of the retina.

O'Connor's Operation. Dr. Zentmayer presented a man who had no less than 30° of divergent squint in a leukomatous eye. All but about 10° had been corrected by the shortening of the internus, with a simple division of the insertion of the externus. Had the eye possessed good vision, results would have been even better. Good results obtained by this method may, in part, be due to the fact that the central tongue of the tendon is advanced and allowed to become adherent in the exact position to which it is brought, so that all strain is taken off the suture used to advance the tendon by the two shortened lateral tendinous strands.

Detachment of the Retina. Dr. William C. Posey exhibited a man fifty-three years of age, with double detachment of the retina in hypermetropic eyes, without apparent causal factor. Both retinas were opaque and swollen, and the retinal veins much engorged. Both discs were obscured by the detachment. Dr. Posey thought it likely that the detachment had resulted from some obscure choroidal disease, which further study of the case might disclose.

Syphilitic Neuroretinitis. Dr. Posey also exhibited a man with severe neuroretinitis from syphilis. Both nerves were moderately swollen; the retinal vessels, tortuous and, especially the veins, engorged. There were no hemorrhages or extravasations, both retinas being apparently symmetrically swollen by diffuse infiltration. Vision was reduced to the perception of hand movements at a few inches. Lues had been contracted ten months previously. After energetic treatment with mercurial inunctions, potassium iodid and pilocarpin sweats, vision had risen to 5/100 in each eye. There was a large absolute central scotoma in the right eye, and a paracentral one in the left.

Dr. Schwenk said that, in some cases of detachment of doubtful origin, he laid great stress upon transillumination. Not many days before, a man had been sent to him from a distant city for lens extraction. From the expression of the eye, Dr. Schwenk decided to defer operation; and, as the result of transillumination, the case was diagnosed as a new growth. Upon removing the eye, a tumor was found. The cataractous lens was undoubtedly secondary to the growth. In cases in which it is possible to employ it and in which the diagnosis is undetermined, Dr. Schwenk has found it of great value.

An Elliot Operation with Complications. Dr. Paul J. Pontius presented a case showing a complication during the Elliot operation. On October 25, 1914, patient was injured while cutting wood, a splinter of which struck his eye. He came to the hospital one month later, and much of the inflammatory condition was absorbed. The pupil was filled with lens material, and tension was plus 3. He was suffering great pain.

Case was treated for a few days; and, as tension did not subside, an operation was suggested. The following clinic day, an Elliot operation was performed. Dissection of cornea was almost completed, when patient turned his eye up; and a corneal perforation resulted. The dissection was carried off to the side; and a 2 mm. opening through cornea was established, with a complete iridectomy. Recovery was good. The man, who had practically no vision, is able, without the least difficulty, to count fingers and discern objects.

Recurrent Sarcoma of the Orbit. Dr. Frank Fisher presented a case in which an orbital growth had been removed, together with the eyeball, over three years previously. Microscopic examination at that time showed a round-cell sarcoma of small size. There was a rapid reappearance of the growth subsequently, and the whole orbit filled. In July, 1912, this mass was removed, the whole orbit being cleared back to the periosteum; and a mass one half to one inch in diameter was found at apex of orbit. Until February, 1914, there was comparatively little reappearance of the growth. The growth is still there, and rapidly increasing in size, and there is a distinct pulsation throughout the whole mass. Dr. Fisher said that he had refused to remove this growth, because at the previous operation he had found that there were arterial and venous anastomoses, the blood coming from vessels almost the size of small lead pencils, and the man nearly dying from secondary hemorrhage. The growth was undoubtedly a sarcoma. Within the last two months, Dr. Fisher had applied electrolysis, with good results. It had diminished the pulsation of the mass, and had also diminished the venous congestion.

Proptosis with Sudden Blindness. Dr. Fisher exhibited a patient who had come to the hospital on October 20, 1914, with proptosis and absolute blindness of left eye, dating from about the 13th of that month. He was admitted to the hospital on October 22. Ophthalmoscopic examination revealed, in the left eye, an optic atrophy, which seemed to be the subsidence of an intense neuritis. The man was married, but had no children; and the Wassermann test was positive. On October 29, an incision was made, so as to examine the orbit with a view to ascertaining whether there was sinus disease or degeneration of the bone anywhere. Further examination of the orbit revealed nothing more than a small mass on temporal side of the nerve, far back in the orbit, and an apparent increase in size of the optic nerve. Dr. Fisher put in a drainage pledget; and redressing showed no pus in the orbit. On November 1, the patient complained of some slight difficulty; and on November 2, declared himself blind in the right eye. This continued until the 9th; and on the 10th, the man could count fingers at about eighteen inches. The ophthalmoscope revealed a slight congestion of the optic nerve on right side, but no atrophy; and there was a normal relation between the two sets of blood vessels. Treatment had consisted of mercurial inunctions and iodid of potassium. Either from the relief of tension in orbit, which had no apparent cause, or from the later use of mercurial inunctions or the iodid of potassium, the patient had been comparatively free from pain. Prior to this, he had had pain, neuralgic in character, over the fifth pair of nerves, and intense nocturnal headache. On November 1, the loss of vision was sympathetic in character, and attributed to atropin, which had been instilled; but this progressed until November 2, when he saw shadows only at six inches.

The *x*-ray proved negative; and on making an incision into the orbit, the bone was found to be normal. That is, there was not sufficient sinus disease to give rise to trouble in the orbit. The presence of the negative *x*-ray was an interesting feature.

Dr. Zentmayer said that when he had first seen this case, through the kindness of Dr. Fisher, he had been under the impression that it was one of ethmoiditis. Subsequent course of the case and result of the exploratory operation were against this view. He thought it possible that there was a growth in the anterior lobe of the brain.

Dr. Posey advised a careful *x*-ray study of the head of the patient.

J. MILTON GRISCOM, Secretary.

COUNTY SOCIETY REPORTS.

ALLEGHENY—JANUARY, FEBRUARY.

The annual meeting of the Allegheny County Society was held January 12, at the Seventh Avenue Hotel, Pittsburgh. The business session was short, the annual election of officers and the "Smoker" occupying most of the attention of the members present. The report of the recording secretary brought out the interesting fact that for the first time in the history of the society its membership is now over 1000. Because of the large number of members attending the meeting and voting it was not possible for the tellers to report on the election but the evening was taken up with a vaudeville performance followed by a buffet supper.

On January 19, the regular meeting of the society was held at which time the report of the election was presented. Dr. Elwood B. Haworth was elected president and was called to the chair by Retiring President Hawkins. In his address Dr. Haworth called attention to the fact that it has been fifty years since the organization of this society and suggested that the event be properly celebrated, and a committee was therefore appointed for this purpose.

Papers were read by Dr. R. H. Boggs on "The Value of Radium in the Treatment of Malignancy, Supplemented by the Roentgen Rays"; by Dr. R. J. Behan on "Operative *vs.* Nonoperative Treatment of Foot Deformities"; by Dr. John M. Conway on "Presentation of a Mediastinal Tumor," and by Mr. Alfred M. Lee on "Quacks and Means of Their Elimination."

The Allegheny County Society held its February meeting Tuesday evening, February 10, in the Assembly Room, Dr. Haworth presiding.

The committee appointed to arrange for the celebration of the fiftieth anniversary of this society reported and recommended that Tuesday, April 20, 1915, the exact anniversary, be the time selected for the celebration. Prominent medical men outside of the county will be asked to be present and take part in the program which will consist of various clinics, and a formal meeting of the society at which a symposium on some medical subject will be presented. It is also planned to hold a subscription dinner in the evening. Guests for the occasion will be invited and a general invitation will be sent to the medical profession. The plans are still under consideration but the recommendations of the committee will undoubtedly be adopted.

Dr. G. W. Stimson presented to the society an interesting case of chronic suppurating frontal sinusitis with a fistula, in a patient upon whom a radical frontal sinus (modified Killian) operation had been performed. Three years ago the boy's left eye became swollen shut by a "boil." This was lanced, its exact nature being unrecognized, and has persisted as a discharging fistula ever since. The patient had visited various physicians and institutions during this time without any marked relief.

On December 3, 1914, an examination revealed a fistula of very small caliber, an hypertrophied middle turbinal and the middle meatus filled with dried pus and crusts, while the skiagram showed a dehiscence of bone at the inner edge of the left orbit, the frontal and ethmoidal cells, as well as the left maxillary antrum, giving a dense shadow indicating the presence of pus. On December 7 the operation was performed through an incision reaching from the temporal end of the unshaven eyebrow to the nasal end whence it curved downward through the fistulous opening almost to the left ala of the nose. As was brought out in the discussion of this case by Dr. M. D. Ritchie the eyebrow had been left unshaven since in these cases it sometimes fails to grow again. The fistulous opening through the bone was cleaned out, a bridge of bone covered with periosteum was left in place but the anterior wall of the frontal sinus above and the floor below were removed, and a large opening was made into the ethmoids. Through the nose the middle turbinal was removed with some of the ethmoidal cells and an opening was made through the external wall of the nose into the maxillary antrum. Extensive drainage was inserted but the external wound was closed without any external drainage, the gauze already in place being led out through the nose.

The patient's recovery was uneventful and rapid and he was discharged on the tenth day free from his discharging fistula.

Attention was called by Dr. Stimson to the cosmetic result and this was commented upon in the discussion as being unusually good.

A symposium on "Blood Pressure" was opened by the paper of Dr. Clyde Brooks of the Department of Physiology of the University of Pittsburgh, entitled "An Experimental and Critical Study of Clinical Blood-Pressure Methods" which presented some results of recent experimental work done by him in collaboration with Dr. Luckhardt of Chicago. These results show that the present widely accepted methods used for obtaining systolic and more especially diastolic blood pressures are both theoretically and practically erroneous. That is, according to the principle of Marey, which is endorsed and followed by most physiologists and physicians at the present time, the lowest point of the place where the greatest oscillations of the mercury manometer, or ameroid disc, or pressure gauge of any other sort, should be taken as the true diastolic pressure. For, they argue, when the pressure inside of the artery and inside of the cuff which surrounds the arm are equal, then the artery would be as if floating free in a fluid and would be rounded only by its own elasticity. Then when the systolic pressure would be brought to bear on the inside of the blood vessel, the vessel would be expanded. This, according to Marey and those who follow his principle, is the mechanism of the production of the greatest oscillations by the various clinical methods of estimating diastolic blood pressure.

But, according to the experiments performed by Dr. Brooks and his collaborator, the principle of Marey does not hold, but the place where the greatest oscillations occur is where the pressure in the cuff is greater than the true diastolic pressure so that the blood vessel is collapsed when the pressure is exactly at the diastolic point. Then when the systolic pressure is brought to bear on the inside of the artery the shape of the vessel changes from a collapsed condition to a passively rounded condition and then a distended condition when it reaches the systolic point. In other words, during each heart beat the vessel changes from collapse to distention, whereas according to the Marey principle at each heart beat the vessel would change from a passive rounded condition due to its own elasticity to a distended rounded condition caused by the systolic pressure.

This error would make all readings that are made according to the Marey principle too high. The amount of error is that pressure in the arm band which is just sufficient to overcome the resistance of the blood vessel and other interferences, whatever they are, so that, at the exact lowest point of diastolic pressure, the blood vessel will be collapsed. As to just how many millimeters of mercury this error would be Dr. Brooks did not state, but he gave as his opinion that in cases of arteriosclerosis this error would be a very considerable one.

Dr. J. I. Johnston continued the program with a paper on "Blood-Pressure Studies in Clinical Medicine." The effects of various diseases upon blood pressure were graphically displayed by a number of carefully compiled charts covering a series of 300 individuals. The charts were so arranged as to make an analysis of the whole subject, since they included the ages of the various patients considered and each chart was drawn with reference to the others. This permitted a direct comparison, and, in view of the fact that a considerable number of cases of each condition were considered, the whole made a most comprehensive study of blood pressure from a clinical standpoint An interesting point brought out by Dr. Johnston's paper was that the fifty-one diabetic patients charted showed high blood pressure, this being contrary to the generally accepted belief.

Dr. Harold A. Miller next presented a paper entitled "Blood-Pressure Studies in Obstetrics." Dr. Miller pointed out that the blood pressure in a pregnant woman ordinarily does not differ from that of the same individual in the nonpregnant state so that a pregnancy can not of itself account for an abnormal blood pressure. Because of the fact that pregnant women are particularly liable to various toxemias the routine taking of blood pressure in pregnancy is, however, an extremely important thing since this is often a factor in the diagnosis of toxemia. One should know a woman's normal blood pressure in order to determine how much damage a certain increase over this normal may mean. Not knowing this, however, it may be said that a systolic pressure of 160 mm. or over means danger to the pregnant woman, particularly if albumin and casts are found in the urine. Convulsions rarely occur until the pressure is considerably above this point and in Dr. Miller's cases no convulsions have occurred where the blood pressure was below 180 mm. (systolic) except in the acute fulminating type of eclampsia where it may be low even in the presence of terminal pathology.

Unless a blood pressure ranging 160 mm. or over can be accounted for otherwise, treatment should be at once instituted, not toward merely lowering the blood pressure but rather toward increasing elimination of the toxemia, using the blood pressure and urinary findings solely as indications of the efficacy of the treatment, or of the necessity of emptying the uterus.

Dr. Miller's paper included several case reports relating to his subject and illustrating the various points made in his paper. One of these cases showed particularly well the relation existing between the blood pressure and the degree of toxemia. This was the case of a woman about thirty-eight weeks pregnant with a blood pressure (systolic) of 190 while the diastolic was 110. Within twenty-four hours the systolic pressure had increased to 220 in spite of eliminative treatment and the patient had a slight convulsion. The uterus was emptied and the pressure fell gradually with a progressive improvement in symptoms.

"Blood Pressure in Relation to Insurance Examination" was presented by Dr. Obed Yost. The point of view of life insurance companies is certainly valuable since it is through them that mortality statistics have been worked out most closely. Dr. Yost spoke of the significance of blood pressure to medical examiners for insurance companies. The requirement that a blood pressure reading be taken in persons applying for insurance has been gradually extended until at the present time some companies are insisting upon a reading with each medical examination. The blood pressure is of great value to insurance examiners in those cases of the well-to-do persons who habitually overeat and under-exercise and then have a high death rate from degenerative diseases. It is now believed that in all cases a systolic pressure of 150 is of sufficient importance to require a second examination. One must remember however that blood pressure may vary fifteen to twenty points in as many minutes and a subject should be quieted down if excited or allowed to rest for a short time if seen just after some exertion, both of which may easily alter blood pressure.

Dr. Yost believes furthermore that one abnormal blood-pressure reading should not be considered as conclusive but should be followed by at least two more on different days. A blood pressure observation should be made in all applicants that are overweight.

At the close of the symposium Dr. Brooks, assisted by Miss Edith M. Chaddock, demonstrated with apparatus brought from their laboratory to the Assembly Room, the principles which he discussed in his paper. Paul Titus, Reporter.

BERKS—January, February.

The Berks County Medical Society held its meeting on January 12, the program for the day being a clinic in charge of Dr. J. Chalmers DaCosta. The cases for diagnosis belonged chiefly to the groups of cancerous tumors. Dr. DaCosta is not a firm believer in the theory of a special cell deposit necessary for the development of the various types of cancer, but he insists that they are frequently due to pressure, prolonged irritation, and to other extraneous causes of like character, either of which may serve as the initial factor in the production of structural changes. In his remarks on treatment, the speaker further emphasized the necessity of radical surgical measures in order to effect permanent relief, and said that many failures are due to the removal of affected areas only without giving due surgical consideration to neighboring glands which are sure to become speedily involved.

At the meeting of February 9, Dr. Addison Rothrock gave an historical sketch of outdoor treatment of tuberculosis. Just who first thought of the open air treatment, we do not know, but in England, Sydenham was an early advocate of its value. He also advocated horseback riding as an adjunct Rush in America was a pioneer in the use of fresh air in this disease. Frequently physicians advised a change of climate believing the climate recommended to be the cure, while in reality it was the life in the open which such patients usually lived. Many sufferers were sent to Minnesota, while to-day we recognize the fact that it was the out of door life more than the special climate of Minnesota which cured. Celsus sent his patients to Egypt, and prescribed a sea voyage and a milk diet. Seventy-five years ago physicians near coal pits sent their tubercular patients to breathe in the fumes of burning coal, which seemed to be beneficial. To-day we know that it was not the coal fumes but living in the open which aided recovery, the huts of the coal burners, being so tiny that the occupants lived outside in fair weather. These coal burners' huts were the first sanatoria in the United States.

In 1839 Dr. George Bodington of England opened a sanatorium for the open air treatment of tuberculosis in Warwickshire. In Germany, Hermann Brehmer was the earliest sanatorium builder, and in 1859 he opened his institution. He was followed by Detweiler, who opened one in 1876. He insisted on the following out of a rigid routine, including life in the open, rich diet, free use of milk and controlled use of wines; also mental and physical rest, massage and baths. Alfred Loomis and Austin Flint were among the early American advocates of the open air treatment.

In New York, in 1839, the Lincoln Home was opened. In Boston in 1861 the Good Samaritan was built. These homes were established under the idea that pulmonary tuberculosis was an incurable disease.

In 1875, my father, Dr. J. T. Rothrock, read a paper before the Luzerne County Medical Society in which he advocated establishing camps in the mountains for the care of early pulmonary cases, claiming that consumption could be cured by life out of doors in the mountains of Luzerne County.

A step in advance was made when Dr. Edward L. Trudeau at Saranac Lake, N. Y., launched his sanatorium. This was established as a place where consumptives came not to die but to get well, which many did.

In 1892, Dr. Lawrence Flick demonstrated to the people of Philadelphia that tuberculosis is a house disease, and from his efforts sprang the Pennsylvania State Society for the Study and Prevention of Tuberculosis. This is the oldest society of its kind in the state. To-day, scattered all over this broad land are hundreds of sanatoria and dispensaries and open air schools, while our jails and insane asylums are giving their inmates the proper care. In the south west are two fine sanatoria provided by the United States Government for the members of the army and navy who are tubercular. Preventoria are also being built where people are prevented from acquiring the disease.

The next step will be to supply suitable occupations and living conditions for arrested cases when they leave the sanatoria. The problem of forest conservation opens up the field of employment and it would be possible to provide work for every arrested case on government land.

In the middle ages leprosy was prevalent over all western Europe; to-day it is a thing of the past. For centuries smallpox was a curse to mankind; to-day it has almost vanished. So it will be with tuberculosis, we will win out. It has reached the high tide of distribution and started to ebb. Tuberculosis must and will go and in some future day the historian of medical progress will speak of it as one of the great physical evils which have formerly scourged mankind.

Clara Shetter Keiser, Reporter.

BUCKS—February.

The Bucks County Society held a stated meeting at Newtown, February 10, with President Erdman in the chair and thirty-one physicians present.

By invitation, Dr. J. Thompson Schell, of Philadelphia. delivered a lecture on "Twilight Sleep." He said in part that there seems to be a wide difference of opinion as to what constitutes "twilight sleep." The "scopolamin twilight sleep," introduced by Gauss and adopted at the Women's Clinic, Freiburg, has stood the test of many thousands of labors. Gauss' method, briefly stated, is based on the principle that the dosage of scopolamin and morphin must be regulated according to the characteristics found and tested repeatedly during the process of labor. Not a full narcosis is desired but Gauss aims to bring about a state which he calls "twilight sleep." During the labor, the woman shows her suffering, but does not remember it. If "twilight sleep" is properly conducted, the woman is unaware of her experiences and as a result has no recollection of her labor pains. She is in fact amnestic. This method has the disadvantage of requiring the constant attention of an experienced nurse during the birth and also that of a physician skilled in the technic of labor and given only in a hospital.

It is also necessary to realize initially that the zone from the "twilight sleep" to full narcosis is broad and varies individually. The first essential point is to obtain the proper drug. Gauss emphasized that the dosage of the second alkaloid, morphin, must be determined with special care, because over-dose of morphin induces apnea in the child after birth, and he recommends that narcophin be used instead as it shows less marked effect upon the respiratory centers.

The method now used at Freiburg, after many carefully worked out experiments, is as follows: Beginning with 1/400 grain of scopolamin alone and given intramuscularly, repeating the dose about every three fourths to one and one half hours, as indicated by the amount of suffering. The first dose of narcophin or morphin of about 1/6 grain is given with the third, sixth and ninth doses. In the Freiburg clinic slight ethyl chlorid intoxication is used as the head is passing through the vagina and over the perineum, about 10 c.c. ethyl chlorid being used. Ethyl chlorid, however, is not always used, but only as indicated, only when the patient becomes too restless. The "twilight sleep" can be initiated as soon as one is convinced that birth is in progress, that is, when the regular labor is present with a dilating os uteri. It is not necessary nor advisable to wait until full dilation takes place. Siegel, of Freiburg clinic, reports 220 cases and claims that he was never obliged to interrupt the "twilight sleep" and claims that he has prolonged this condition for 31, 33 or 39 hours without the slightest injury to either parent or child; the largest number of injections he ever gave to one patient was 24, 25 and 27 injections. He claims, however, an average of six doses, the condition aimed at is not complete anesthesia, but a condition of amnesia. Narrow pelvis, however, is no contraindication and Siegel reports five cases with conjugate of 8 cm. when "twilight sleep" was carried out successfully.

"Twilight sleep" does not require any special preparation. All that is necessary is to avoid speaking to the patient, to avoid too much noise around the patient and that light does not fall directly on the face as she is remarkably susceptible to light. The quieter the delivery room and the more precaution that is taken to shield the patient, from all noises, the smaller the amount of the drug is required. Amnesia usually sets in between the second and third injection, therefore, "twilight sleep" will not be successful in those cases in which actual delivery occurs earlier than one and a half hours after the first injection. "Twilight sleep" does not seem to increase the number of perineal tears.

During the discussion by Drs. Arnold, Raudenbusch, Reddan, Richards, Swartzlander and Wilkinson, the trend was that the method was uncertain, not without its risks and often producing marked excitement in the mother and frequently asphyxia in the child; that post-partum hemorrhage from relaxation of the uterine tissue is more liable; the method was applicable only in selected cases in private rooms in hospitals and never in ward cases; that it required undivided attention by both nurse and physician and can not be used in general practice and at its best this method is not without its dangers.

"Twilight sleep" is not a panacea and women who have easy and rapid births, who bear pain well and are strong and non-emotional should not have this treatment. Contraindications are threatened eclampsia, high blood pressure and pathological urine. Neurotics, isolated in private rooms, may be saved much mental and physical suffering by use of scopolamin and morphin carefully given. Experience may work out a method applicable to a larger class of private maternity cases.

ANTHONY F. MYERS, Reporter.

DELAWARE—FEBRUARY.

The regular monthly meeting of the Delaware County Society was held at Chester Hospital, February 18, President Morton presiding.

Dr. W. A. Newcomet of Philadelphia gave a very interesting talk on "Radium," discussing its chemistry, physics, and use to the medical practitioner.

Dr. A. E. Codman, also of Philadelphia, gave an illustrated talk on "The Nonoperative Treatment of Malignant Diseases." The treatments used included radium, *x*-ray, diathermy, the injection of various sera and fluids, etc. In the discussion which followed the question was raised if any one could say with certainty that cancer was or ever had been cured. The term "arrested" seemed to be the answer to this question. W. E. EGBERT, Reporter.

HUNTINGDON—FEBRUARY.

The Huntingdon County Society met at the Huntingdon Club, Huntingdon, February 11, at 1:30 P. M., with President Brumbaugh in the chair and twenty members present.

A motion of thanks to the Tyrone Medical Club for their hospitality at their annual banquet, and the pleasure of hearing Dr. Alfred Stengel on the "Treatment of Diabetes and Nephritis," was made.

Dr. Wolfe presented a paper on "Puerperal Sepsis" in which he dwelt on: (1) Puerperal sepsis is a nonspecific, infectious disease differing from ordinary surgical septicemia only in that it affects through the parturient canal during the puerperal period. (2) The paramount importance of conserving nature's own barrier of granulation tissue thrown about the seat of infection. (3) Prophylaxis should be given primary consideration and attention, everything about the room, bed, patient, clothing, instruments and attendants should have been rendered sterile preceding labor. (4) Treatment requires frequent local antiseptic (intrauterine) douching, and favorable position (Fowler's) for natural drainage. (5) Veratrum viride to control pulse and temperature; stimulants and tonics when indicated and nutritious diet. The paper was fully discussed.

J. M. KEICHLINE, JR., Reporter.

JEFFERSON—DECEMBER, JANUARY.

The Jefferson County Society met in Reynoldsville, Thursday, January 14, 1915, with twenty members present. Officers for 1915 were elected. Resolutions were offered and accepted on the deaths of Dr. A. H. Bowser and Dr. John W. Foust of Reynoldsville.

The scientific program was opened by Dr. F. D. Pringle, with a talk on "The Uses and Abuses of Pituitrin." Pituitrin has been used most effectively in cases of uterine inertia to stimulate the uterine muscle to increased contractions. Alone, it is inactive until the uterus becomes intolerant of its contents. In postpartum hemorrhage and in Cesarean section it has been used effectively in combination with ergot. Its routine use postoperatively prevents tympanites, and it has been used successfully in subinvolution of the uterus. Used intravenously it gives a rise of from ten to twenty points in blood pressure; subcutaneously the rise is more gradual. In incomplete abortion or miscarriage it has little effect when used alone. If used in combination with ergot it is more beneficial. Pituitrin is contraindicated when there is any obstruction to delivery, when there is not sufficient dilatation present, and in old and contracted cervix and where valvular heart lesions are present.

In discussing Dr. Pringle's paper, a case of ruptured uterus and a case of postpartum hemorrhage, following its use, were reported.

Dr. R. Ross Jordan read a paper on "Infantile Paralysis." Dr. Jordan stated that "rickets excepted, it is the most prolific source of deformity." The crippled condition of the patient is the paramount issue of the attack and to this subject the paper was principally directed. A certain number of paralyses are of transient character, lasting for a few days or weeks, the nerve cells have not been destroyed but have suffered temporary yet profound toxemia, with resultant disturbance of function, or as the result of pressure from hemorrhage, edema or exudate. A certain number of patients are completely and permanently paralyzed, in which there is an actual destruction of nerve cells, from which the fibers supplying the affected muscles arise. A third group of cases represents a condition of weakness, with no actual paralysis; this exudate, edema or hemorrhage has, by pressure, interfered with the cell function without actual destruction of cells, or at most with destruction of but few.

According to Wickman, eighty-five per cent. of cases were affected in one or both legs; in fifty per cent. the paralysis was limited to the legs alone. We may find one leg, both legs, or a particular muscle or group of muscles involved, most often the anterior, the peronei, the flexors of the foot and the extensors of the toes. In the thigh, the quadriceps is the most frequent victim.

The problem of treatment in infantile paralysis, lies with the end results rather than with the onset; until we have a more definite knowledge of the etiology, prophylaxis is impossible. In the early stage treat it as you would the other infectious processes: rest, free catharsis, low diet, ice to head and spine. Urotropin is justified in the hope that it may serve to render the virus less virulent in the cerebrospinal fluid. Recovery, in chronic conditions is very slow. Mechanical supports should not be resorted to too early in the case. Too long a delay in their use however may result in greater deformities. Coöperation between the internist and the surgeon is the solution of the question. Massage, electricity and passive motion should be regularly followed. From a surgical standpoint great results are claimed in tendon and muscle transplantation (Ref. Jno. B. Murphy's Clinics, July, 1914).

Dr. F. L. Schumacher gave a "Résumé on Nose and Throat, for 1914." Most writers agree that there are three types of tonsil, which demand removal: (1) Any tonsil, no matter what size, that is the seat of constant inflammation or suppuration; (2) the large tonsil, so large that it obstructs breathing; (3) the small submerged tonsil, buried underneath the pillars. The concensus of opinion is against the indiscriminate removal of tonsils, simply because of size. In this respect there is more conservatism than formerly. One of the most notable articles of the year on the "Anatomy of the Tonsil," is that of Dr. Leslie Davis, *Laryngoscope*, for March, 1914, which clears up many doubtful points, in regard to hemorrhage and its control, that have previously existed. In operation, all agree that complete enucleation is the end sought for, either by use of snare, scissors or blunt dissector. The last is gaining in favor because it causes the least traumatism and is followed by the least hemorrhage. Ether is the anesthetic *par excellence*. The lingual tonsil has come into prominence lately. All the affections of the faucial tonsil are common to it. The point emphasized is that it is too frequently overlooked.

As to adenoids, there is but one treatment, complete and early removal, the sooner the better, not only to improve the breathing space but to prevent otitis media and mastoiditis. True recurrence of adenoid tissue seldom occurs if there has been complete removal and the surface left smooth and free from palpable fragments.

In nasal surgery the trend has been more towards conservatism, especially in acute inflammation of the accessory sinuses. A pneumococcal infection of the frontal sinus following influenza is best treated by rest in bed and twenty-grain doses of aspirin. Chronic suppuration of the nasal sinuses demands drainage. For deformities of the nasal septum submucous resection is the recognized procedure. Puncture of the maxillary antrum is too seldom performed for diagnostic purposes. In most cases it is a simple procedure attended with but little shock and almost no hemorrhage. The x-ray is considered a most valuable aid in the diagnosis of accessory sinusitis. Rhinoplasty during the past year has shown marked improvement in methods. Hump nose, saddle nose, elongated nose and laterally deformed noses have been so treated that the results are remarkable.

Dr. S. M. Davenport reported thirty-six cases of pneumonia, with careful case histories, accentuating the frequency of lobar pneumonia in children and showing a very fair mortality rate under the treatment of fresh air, cold water, and simple medication.

He believes that a frank case of lobar pneumonia in a child tends to recovery under simple treatment.

N. C. Mills, Reporter.

LEBANON—February.

The regular meeting of the Lebanon County Society was held in the courthouse, February 9, at 2:30 P.M., with President-elect Reiter in the chair. Dr. Theodore B. Appel of Lancaster gave an address in which he made an exposition of the recent radical changes in the constitution of the state organization, touching upon the subject of fiscal year, per capita tax and qualification for membership, and emphasized the fact that all county dues be paid promptly. He then related the benefits accruing from state membership, referring to medical defense and benevolence and gave examples of instances where needed help was afforded the widows and children. The speaker then turned to the county society and drove home the fact that the men will get out just as much as they put into it. Open meetings were recommended and the rigid enforcement of the medical practice laws to eliminate the quacks and dupes was strongly urged. A permanent solicitor or legal adviser for the county society was deemed proper. Dr. Appel finished by giving, in brief, an outline of the Harrison law as applied to the general practitioner.

George R. Pretz, Reporter.

LUZERNE—January.

At a meeting of the Luzerne County Society held in Wilkes-Barre, January 6, Dr. Andrew T. McClintock, pathologist to the City Hospital, read a paper on "Pathology." A succinct presentation of the present teaching in Vienna of the pathology and clinical diagnosis of syphilis and diseases of the liver and blood was given. The following is an excerpt on tuberculosis:—

The etiological entity of tuberculosis may be either a granule or one of a half dozen forms of bacillus. The granule is not acid fast, is gram positive, largely lacks neutral fats, and causes no tubercles or caseation, but fibrotic changes. At its door are laid many aborted cases of apical disease, half of the emphysema cases, especially in the young, and rather rare, localized, bronchiectatic changes. The acid fast rods range from the highly virulent dwarfs, through the commoner shorts and longs, short and long nodulars to the indolent giant forms. They gain entrance in ninety-nine per cent. of the cases in Vienna through the air passages and lodge in the majority of cases near the base of the right upper lobe quite close to the pleura, causing the development of a tubercle called by the Germans the "primäre herd." Since I am merely giving a résumé based on direct instruction, it is not necessary to cite authorities, but in the case of this important question, I would like to draw your attention to an article in the *American Journal of Diseases of Children*, November, 1914, by Wollstein and Bartlett, where the post mortem study of tuberculosis lesions in children is compared to the classical work of Anton Ghon in Vienna.

The future courses depend most largely upon two factors, that of age, and that depending on the balance between the virulence of the germ and the resistance of the individual. Concerning the latter factor, we can only describe in clinico-pathological terms the degrees of involvement which imply its existence. With respect to age the main differences exist under fourteen years of age.

In the first six months we have a mortal disease, in the second a disease which kills in ninety per cent. of all cases. In the second year the curve falls rapidly to about ten per cent. mortality. The latest statistics of incidence were not complete, but were considered to bear the well-known relation to measles and whooping cough and with these to the second and third years of life. In the great majority of cases, infection takes place before puberty. In all cases in which the patients are under four years of age we have an active disease. From four to fourteen the percentage of active cases decreases. This has been studied (Dr. Sluka: St. Ann's Children's Hospital, Vienna) on a basis of three tests: the subcutaneous, considered as reacting to both active and inactive disease: the von Pirquet, positive mostly in active cases; the Moro only in active cases. Cases reacting at all up to the fourth year responded to all three tests. At fourteen years the subcutaneous was positive in ninety-four per cent., the von Pirquet in sixty per cent., the Moro in forty per cent., of suspected cases.

To correlate the pathology of the lungs in tuberculosis, according to the age, the primary tubercle or tubercles directly enlarge in cases within the first six months, later the bacilli may be given time to pass to the bronchial lymphnodes corresponding to the position of the primary lesion. In the first decade the involvement of pulmonary tissue if not from the primary lesion, is practically always from the hilus glands outward by direct propagation. The apex is never involved alone before ten years of age, and rarely before the thirteenth year. Moderate enlargement of the hilus glands after the ninth year is considered normal. The development of apical disease is considered dependent upon the assumption of one of the types of adult thorax which also takes place at this time. These facts gleaned largely by the correlation of the fluoroscope screen and postmortem findings have led to a radical difference in the clinical examination of the lungs on the basis of age. This limits the fundamentals of the examination in children upon a rather simple basis, under three headings: First, the location of the primäre herd, if sufficiently developed, by the usual methods, examining along the middle portions of the lungs, especially posteriorly and in the axillæ; second, the location of the enlarged glands by the percussion of the cervical and dorsal spines, beginning below, and not searching so much for a definite dullness, as for a fault in the normally, beautifully graded pitch increases, elicited by lightly percussing, directly, the spines from below upwards. Also the well-known method of ausculting for the point at which the tracheal voice qualities cease, if this occurs below the first dorsal vertebra it points strongly to enlarged hilus glands. Finally hilus infiltration, typical of later childhood, may be detected most often just to the right of Ludwig's angle, sometimes only by percussion, sometimes only by a slight, sudden reversion of the sounds to the tracheal type as the 'scope is carried from the notch down and to the right. The angle made by the sternum and the left cardiac border is another important location, and posteriorly about the fourth and fifth dorsal vertebræ, especially on the left and down between the vertebral border of the scapula and the spine.

Besides the pulmonary, the commonest forms of manifestations in children are acute diffuse miliary tuberculosis, alimentary involvement from injestion of sputum, bone and joint tuberculosis, and tuberculids of the skin which are quite common and easily overlooked. After the fourteenth year the second factor bears the stronger and its study is naturally best followed in the lungs.

Considered briefly anatomically, the forms known to all, we may have a simple bronchitis, the bacilli lying only on the surface, or ulceration of the bronchi with caseation, or a peribronchitis and bronchiectasis. In the case of the parenchyma, the caseous, florida or pulmonic caseous, the more common fibrocaseous, including the ordinary cavernous ulcerating or resting, or the peculiar ulcerocachectic of the age, and, third, the fibrous, closely associated with changes involving more especially the interstitial tissues, such as those in connection with emphysema. Under the heading of interstitial tuberculosis are placed the miliary forms, acute. subacute and chronic, under pleural varieties simple effusion, caseation and fibrotic thickening.

Clinically their remarkably simplified schema of the findings makes the detection of the degree or the stage comparatively easy. Based on the pathological anatomy, we have four epochs: Infiltration, caseation, cavernation, and scar formation, the corresponding temperature findings being respectively high sustained fever, remittent fever, intermittent fever and not fever. By auscultation, in infiltration, we find the breathing faint, locally affected, vesicular; bronchovesicular to bronchial in caseation, metamorphic to amphoric in cavities, loud bronchovesicular in scar formation. The râles: In infiltration, moist, crepitant, tumbling in bunches; in caseation, ticking; in cavities, bubbling; in scarring, dry or absent.

As to clinical types there are three upon which stress is laid; one the malignant, seen in country dwellers coming to the city, hence showing low immunity and typically associated with the dwarf, virulent bacillus. Sudden and intense are the symptoms, the glands are tremendously enlarged (always a bad sign when associated with marked active tuberculosis elsewhere), the physical signs are ridiculously slight. Yet with the body horizontal from below, when there appears no breathing, early the râles will be heard to bubble in the cavities. The other type is the insidious closed form known as the benign miliary type. Here we have usually a hidden pulmonary lesion from which organisms escape at intervals lodging practically anywhere in the body, causing a moderate reaction with often the development of a solitary tubercle. A strong immunity may cause persistent resolution, but in the end the disease gains the upper hand and death comes frequently with the picture of asthma and apparently resulting emphysema. As to the commoner manifestations, we may have a fleeting apicitis, an attack of pleurisy, epileptiform attacks from a brain tubercle, an attack of Weil's disease with jaundice, salpingitis, attacks resembling malaria, and typhoid fever. The patients pass for neurosthenics, hysterics, chlorotics, degeneratives, epileptics. Tuberculin is here considered to show its great usefulness.

Thirdly, there is the relationship between pleurisy and rheumatism. Based upon the degree there are four types; a benign disease with few lung foci, little fluid in the pleura and bursitis; the moderately severe, more involvement, more fluid, effusions into small joints like gout; the severe with caseation, much fluid, polyarthritis (like inflammatory rheumatism). It is important to include in this third type only those forms of arthritis beginning when the pleural fluid begins to be absorbed and which disappears with fluid. Finally there is the chronic form, in which with fibrous pleurisy lie some of the cases of arthritis deformans.

W. H. Corrigan, Reporter.

MONTGOMERY—January.

The Montgomery County Society met at Charity Hospital, Norristown, January 6. This being the annual meeting, the time was taken up with the reports of different committees, and election of officers. It was unanimously decided that the society publish a *Monthly Bulletin* for 1915; and a vote of thanks was given the *Bulletin* staff for its very efficient work. It was decided to have the *Journal of the A. M. A.* for the last four years bound in volumes, and placed in the library, thus completing the set.

At the meeting of January 20, Dr. J. O. Bower of Wyncote, read a paper on "Postgraduate Surgical Work Abroad," describing in detail the courses given in pathology, gynecology and obstetrics, orthopedics, diseases of the skin, surgical anatomy, genito-urinary diseases, anesthesia, etc.

The retiring president, Dr. S. B. Horning gave his address upon "The Country Doctor of Ye Olden Time."

E. S. Buyers, Reporter.

PHILADELPHIA—January.

The Philadelphia County Society met January 13, at 8:30 p.m,. President Robinson in the Chair.

"Inhibition, Muscle Tone and the Reflexes" was presented by Dr. Charles K. Mills. The attempt to present the scientific aspects of some neurological problem should be done in such a way that the practical applications of the problem could be easily interpreted. The subject announced might at first seem not to fulfill this requirement, but closer examination will show that a proper understanding of the subject involves diagnostic facts and principles of much importance. The superficial and deep reflexes are among the most demonstrable of phenomena which have value in diagnostic symptomatology. Reference is made to only a few of the many so-called reflexes, as their underlying principles are acceptable to all.

Attention is directed to the clinical phenomena described under such well-known terms as knee jerk (exaggerated, diminished or lost), ankle jerk, and ankle or foot clonus, the Babinski response by extension of the toe or toes from plantar stimulation, Sinkler's toe phenomenon, and the defensive reflexes of Babinski with the presentation of cases demonstrating each of these phenomena. The first case is one of syphilitic meningomyelitis, the lesion being limited to the ventral portion of the lower thoracic cord. The dominant symptoms are very marked hypertonic or spastic paresis with exaggerated knee jerks, foot clonus and typical Babinski response in both lower extremities. Sensory symptoms are entirely absent. The second case is one of a partly compressive and partly destructive lesion of the cervical cord, the patient having had a fracture dislocation with hemorrhage and subsequent traumatic meningomyelitis. The symptoms were partly those referable to the upper extremity and upper regions of the trunk; but more especially in connection with the subject in hand, markedly increased knee jerk, foot clonus, the Babinski response, the Sinkler's serial response and the defensive reflex of Babinski. The third case is one of hemiparesis evidently due to a focal lesion involving either the cortex or subcortex, or more probably both in the motor (pyramidal) region. The prominent reflex symptoms here were also exaggeration of the deep and superficial reflexes in the lower extremity. In both the second and third cases hypertonicity was present in the parts showing exaltation of reflexes. The fourth case was one of typical tabes in a rather advanced stage. Of other cases now or in the past under my care, one was a case of complete transverse lesion of the thoracic portion of the spinal cord, with complete flaccid or atonic paralysis below the site of lesion; in another, flaccid hemiplegia appeared after a cerebral lesion; in others, such flaccid paralysis was present at first but later became by slow increments spastic hemiplegia and in still others spastic hemiplegia was shown from the first. One case of remarkable character was an instance of pernicious anemia affecting the posterior and lateral portions of the cord and giving in the lower extremities absolute loss of the sense of position and passive movements and of deep sensibility, impairment of epicritic and protopathic sensibility with moderate paralysis and moderate hypertonicity, exaggerated knee jerks, foot clonus, the Babinski extensor phenomenon of the toes, the Sinkler response and a classical picture of what might be termed the defensive reflex of Babinski, the toes not only flexing on the foot, the foot on the leg, the leg on the thigh and the thigh on the pelvis on the side of plantar stimulation, but a similar withdrawal occurring in the lower extremity of the opposite side.

The older view that the exaltation of the reflexes is due to the withdrawal of cerebral inhibition or control because of the severance in whole or in part of the pyramidal tracts is disproved by the observation of Bastian and others, including myself, that a complete transverse lesion of the cervical or thoracic spinal cord gives no exaltation of muscle tonicity with exaggerated reflexes, but complete atonia. My view is that there is a special cerebral or rather periphero-spinal-cerebral tonectic apparatus; that in man tone is a cerebral cortical quality, not cerebellar as held by Hughlings Jackson and Bastian and not spinal except in highly attenuated degree as was once held and still seems to be maintained by many. I believe there is a special cortical rendezvous for tone, probably in the mid-frontal region and probably more developed in the right than in the left cerebral hemisphere.

Tone might be regarded as derived from peripheral sensation through the periphero-central sensory pathway, and these sensory stimuli maintained in the normal individual a standard tonectic state, or what might also be termed a uniform condition of tonic innervation. The cortico-tonectic stimuli are delivered to the pyramidal motor system and, when uniformly and rhythmically delivered, maintain the motor system in a state of normal muscle tonicity. Withdrawal of the sensation reduces cerebral tone and hence lowers muscle tonicity and impairs or destroys reflex response. Sensory increase adds to tonectic stimuli. When tonectic impulses are fully withdrawn flaccid paralysis results. This full withdrawal may occur either through lesion of the sensory pathway or more or less complete lesion of the pyramidal pathway. The probable explanation of cases of localized ventral or anterior myelitis in which the lesion is destructive in regard to the pyramidal tracts I believe is that the cortical rendezvous of tone, continuously receiving its maintaining stimuli from the sensory periphery, is kept fully charged, and, discharging by way of the pyramidal tracts, meets with a partial block at the site of the lesion. This partial block brings about a state of cortical and cortico-spinal erythrism, one of the results of which is to overcharge the neuraxons, which reduces in number by the lesion, with tonectic stimuli or tonectic innervation. This hypertonia is expended in a forcible but irregular way on the lower spinal neurons and gives rise to the resulting hypertonicity. Evidently the state of disease at the site of the block probably causes a demyelinization of the neurons still sufficiently sound to transmit stimuli, and in this way the hypertonia is augmented. The condition brought about by the neuraxons in the seat of the disease is somewhat similar to that in the infant before myelinization and it is well known that exaggerated reflexes and the Babinski response are present normally in children of very early age.

One problem among others not yet clear, which one neurologist frequently asks another, is: Why does the great toe turn up in the Babinski response? Why do we not with exaggeration of muscle tonicity and the reflex exhibition have normal plantar flexion greatly increased instead of dorsal extension of the toes? I will leave the answer of this problem to my hearers.

Dr. Theodore H. Weisenburg presented a paper on "The Value of the Wassermann Reaction with a Discussion of the Treatment of Syphilis of the Nervous System." Too much dependence is being placed upon the diagnostic value of the Wassermann reaction and, as a consequence, clinical interpretation has been more or less neglected. The percentage of errors in the diagnosis of syphilitic diseases of the nervous system was no greater in the pre-Wassermann days than at the present time. While the Wassermann test is a great help in diagnosis, a case should be diagnosed first and last upon the clinical symptoms. There is no difference histologically between the stages of syphilis, or between syphilis of the nervous system and of other structures. The only difference between direct and parasyphilitic diseases lies in the fact that in the latter the spirochete invades the parenchymatous structures which can not be reached by the salvarsan. Even were this possible, the best that could be expected is a cessation of active inflammation for, if degeneration has once occurred, normal can not be restored. I advocate intensive use of salvarsan and mercury and it is my practice to give, first, five intravenous injections followed by an equal number of Swift-Ellis treatments, this is to be repeated in the course of a month or so at less frequent intervals, if the results are not satisfactory. In all instances treatment should be checked up with the serological findings.

"Moral Degeneracy the Product of a Bad Home Influence" was presented by Dr. James Hendrie Lloyd. My object is to emphasize the personal element in moral degeneracy rather than the scientific. I have long had the opinion that the scientific aspect of these cases is often overemphasized; that a good deal is lost by leaving out of account the personal equation. The tendency of the age is too mechanical, too bureaucratic. We are coming to rely too much on formulas and are in danger of not relying enough on insight. It is not a right method where, as in nervous and mental diseases, we have an imperative duty to study character and environment. Of several boys who had shown a strong tendency to vagabondage, one had run away from home when he was eleven years old and had been an inmate of nine different asylums, reformatories and jails. He became a "hobo," riding about on freight trains and even made his way across the continent. His home life had been entirely unsuitable. Another boy was the son of well-to-do people who had the American roving habit, and had lived in at least a dozen different places. The effect of such an unsettled life upon children is bad. In this case it had led to the boy's running away from or being expelled from four different schools and discharged from several commercial courses. The railroads develop in such boys a sort of "wanderlust." It is impossible to trace heredity because beyond the third generation few people know their family histories, especially the health of ancestors. In 1914, 60,000 laws were made in America. We need, however, not more laws, but more discipline. The doctrine of heredity is a barren doctrine and will never absolve the parents from their responsibilities.

Dr. F. X. Dercum read a paper on "The Treatment of Mental Affections as They Are Met with in General Practice." It is the general practitioner who sees disease in its most manifold forms and sees it first. In America the practice of medicine has differentiated itself into two branches largely comparable to the division which has taken place in the practice of law in England. Mental diseases are so frequently connected with the internal diseases, coming under the care of the general practitioner, that he necessarily comes into contact with mental affections with greater frequency. Even diseases commonly regarded as being distinctly mental are proving to be due to disturbances of metabolism which lead to phenomena of intoxication and in which the symptoms of a given disease strongly resemble those of an infection with the subsequent and gradual establishment of immunization. Among the most common disturbances met with by the general practitioner is the delirium accompanying the ordinary febrile affections, the various exanthemata and infectious diseases generally. Treatment resolves itself into (1) elimination of the poison; (2) maintenance of strength; (3) allaying of excitement so far as necessary. The means at command are free administration of water, free use of baths, free administration of nourishment, and administration, when necessary, of cardiac stimulants and sedatives. The most efficient form of bath is the prolonged warm immersion bath at 90° or 95° F. More easily employed, however, and therefore, more efficacious is the warm pack. In ordinary household practice the warm immersion bath can only exceptionally be used. If the patient be robust and the need urgent a hypodermic injection of pilocarpin muriate, gr. ⅛ or gr. ¼, may be given at the same time. In given cases it is important to administer sedatives. An expedient practiced in Germany, which is of great value, is the hypodermic injection of small doses of scopolamin and morphin. In alcoholic delirium the giving of a full dose of paraldehyd sometimes is of great service. As the sleep produced is likely to be short, other sedatives, such as trional, sulphonal, medinal or veronal may be given subsequently but are rarely necessary. Commitment is unjustifiable in cases of delirium because of the usually short duration. Especially should the mistake be avoided of confusing a delirium with mania. Melancholia is the only member of the manic-depressive group which can be successfully treated outside of institutions, and this only when of mild degree and under special circumstances. Tendency to suicide must be borne in mind. Self-destruction is best guarded against in the asylum though not absolutely even there. Cases of dementia præcox in the greater number of instances necessitates asylum commitment. In milder cases patients are benefited by rest and general physiological methods. The importance of retraining and reëducational methods in suitable cases need hardly be pointed out. Paranoia and paranoid cases generally are not suitable for extramural treatment. At times, however the lucidity of the patient is such that asylum authorities might not hold him. Wiser treatment here is to enlist the patient in some simple employment. In cases of psychasthenia we are rarely justified in committing. These are the patients who present the special forms of fear, the chronic indecisions or insanities or doubt; the defects of inhibition, termed by the Germans, the Zwangsneurose, and finally the deficiencies of the will, termed by the French, the aboulias. Here the treatment must be limited to simple physiological procedures into which rest methods and suggestion, various forms of psychotherapeutics and training must of necessity enter. Many of these patients present the unmistakable evidences of a hypothyroidism. The various other forms of mental disease confronting the practitioner, such as the melancholia of middle life and the dementia of old age, each require treatment based upon general principles and common sense. I would emphasize the importance of simple physiological procedures, such as rest and full feeding, which especially promote the formation of antibodies and possess therefore special therapeutic value. Never be in a hurry to make a diagnosis of insanity. If you are in doubt, do not, of course, commit. Do not insist upon commitment when the friends and relatives oppose this course.

Dr. D. J. McCarthy in discussing: For three or four years the medical profession has encountered a series of pseudoscientific statements concerning mental deficiency, carried out by field workers untrained in psychology. This material is being dealt out upon the question of the influence of heredity and of acquired characteristics and is to my mind of no scientific value. There is no more vicious influence upon the question of heredity, mixed up as it is with the study of eugenics, than that of the Binet and other tests to determine the efficiency of the child. These tests are frequently made by untrained field workers and even by physicians who have no knowledge of the underlying basis of mental disease and little training along psychological lines. I would differ from Dr. Dercum upon the question of restraint upon patients in institutions for the insane, and would prefer to use such restraint to employing scopolamin, morphin and other drugs. I would not commit any patient to an insane asylum unless they had been under observation for a considerable time. Such observation should be carried out in a general hospital with the attendant opportunity to study metabolism, blood analysis, etc., and the patient not committed until the case has been shown to be one of hopeless dementia. I look upon every case of mental disease as one for the internist rather than for the neurologist, unless the neurologist should be at the same time a good internist.

Dr. Judson Daland: I welcome the invitation to participate in discussion, because I desire to express forcibly my appreciation of the unusual excellence of each of the papers presented this evening containing much that is valuable and practically useful for the general practitioner. I agree with Dr. Weisenburg that occasionally syphilis of the nervous system exists when Wassermann reaction is negative; but, as a rule, this is of rare occurrence, and ofttimes represents simply the so-called negative phase; *i. e.*, a period of latency, where the syphilitic focus is so situated as not to be in close relationship with the general circulation. This period of latency is frequently secured by judicious specific treatment, and it may continue for a few weeks or a few months, when again the serum or the cerebrospinal fluid gives a positive Wassermann reaction. In treatment of serious involvement of the nervous system by syphilis, in diseases such as general paresis and tabes, it is important to follow Ehrlich's original injunction that the dose of salvarsan should be as large as can be safely borne by the patient, so as to cause the death of the *Spirochæta pallida*. If the dose be small, active development of the parasite may be interfered with, without causing death of the parasite, and sometimes the parasite is stimulated to increased activity. After three or four doses of arsenobenzol have been given at weekly intervals, mercury should be given by skin or hypodermatically for a month or more before returning to use of salvarsan. In these cases especially, the patient must not be allowed to leave bed for one or two days; and careful observations should be made so as primarily to recognize and treat any unusual symptoms that may appear, and also to prevent attacks of unconsciousness or syncope, for either may prove fatal.

Dr. Dercum, closing: Possibly I have been misunderstood in regard to use of sedatives, more especially in regard to scopolamin and morphin. I believe it is far wiser to give a struggling patient a small dose of scopolamin and morphin if a bath or wet pack is to be administered than to attempt these procedures without this precaution. Danger of physical injury, or of collapse in presence of a weak heart is thus lessened.

Dr. Mills, closing: I did not call sufficient attention to the fact that it is not correct, as has been held, that the withdrawal of cerebral inhibition from the pyramidal apparatus is the cause of hypertonicity (spasticity, rigidity) in lesions of the spinal cord. This is demonstrated by the fact that complete transverse lesions of the cervical or thoracic cord, as was first recorded by Bastian and as was early observed by myself, causes not hypertonicity but hypotonia, or even complete atonia. The correct explanation of this phenomenon would seem to be that blocking of all impulses from above the seat of the lesion completely withdraws the tonectic stimuli which normally influence the pyramidal motor system.

YORK—FEBRUARY.

The York County Society met in the Colonial Hotel, February 4, President Shatto presiding, and sixty-one physicians present, the record attendance. Drs. Stephens, Immerman, Park and Parker of York were present as visitors. Dr. L. M. Hartman was elected as editor of the *Bulletin*, owing to the resignation of Dr. J. Frank Small, who will leave the city for an extended period of time in search of health. The secretary-reporter was instructed to seek the services of Dr. Stevens relative to a legal opinion concerning that section of the Constitution referring to lodge practitioners, etc.

Dr. David Riesman of Philadelphia conducted a medical clinic, which proved to be a most interesting treat to his large audience, who listened to this masterly teacher for almost three hours, and were willing to remain even longer. Including the clinical material provided by the committee on scientific business, about forty patients were present, the large number being a response following an invitation in the *Bulletin* for the presentation of patients. Dr. Riesman made a careful selection, and was able to present to the members fifteen of the patients, although as he remarked, there was sufficient good material present for a most interesting clinic lasting a month. The patients demonstrated represented the following conditions, chorea (2), hypertension (4), hpotension (1), diabetes mellitus (1), arthritis deformans (2), Ranaud's disease (1), empyema (2), dextrocardia with transposition of abdominal viscera (1), and sarcomatosis (1).

In speaking of chorea, he laid great emphasis on the tonsils as an etiological factor, quoting cases where only section of these organs revealed pockets of pus, etc. The quartet comprising tonsillitis, articular rheumatism, endocarditis and chorea was explained, and the carelessness with which the very early symptoms of chorea, such as "nervousness," "dropping of pencils," etc., was attended, was condemned.

His reference to hyper- and hypotension was typically Riesmanesque. The more recent theories of the causation of hypertension in those cases where no demonstrable cause could be found were most clearly outlined; *viz.*, (a) the theory of increased adrenal secretion; (b) the theory of splanchnic arteriosclerosis; and (c) the interference with the "depressor" impulses located in the aortic arch, as a result of sclerosis, preventing their afferent messages to the medulla to "open up" the circulatory channels by way of the vasomotor system. Dr. Riesman stated that it was also possible that renal changes might be present despite the total absence of all pathological renal findings. Particular emphasis was laid upon the clinical significance of both hyper- and hypotension. He referred to one patient who played golf, both winter and summer, with a systolic pressure of 275, and who was benefited only by venesection at intervals. Nitrites, etc., made this patient much worse. A frequent complication is acute pulmonary edema, which may recur many times, and is invariably relieved by a hypodermic of morphin and atropin.

Diabetes mellitus was regarded as a disease which affected more particularly the pancreas. He detailed the recent experiments upon dogs, demonstrating the rôle of this organ in the production of glycosuria. Removal of nine tenths of the pancreas, and a meat diet produced what might be termed a "potential" diabetes, but the assimilation of glucose, under these same conditions, produced a glycosuria which it was practically impossible to eliminate. The importance of these experiments in their relationship to diabetes mellitus, in man, was clearly explained. The early diagnosis of this condition, before the classical symptoms become manifest, can ofttimes be made by giving more attention to the so-called "inaugural symptoms," *e. g.*, sexual impotence, "sciatica" and more particularly "double sciatica (?)," stupor, itching, boils, carbuncles, cataract, etc. In determining the carbohydrate tolerance, Dr. Riesman preferred the use of bread, in known quantities, as the administration of glucose eliminated the conversion process into sugar, which is important in testing for tolerance.

He thought that arthritis deformans must be epidemic in York, considering the number of cases present. The "poker" spine and the "question-mark" spine were well illustrated with photographs, and also were present in the patients exhibited. The disease is conveniently divided into two classes; *viz.*, (a) rigidity, with joints involved, and (b) rigidity, without joints involved, and the *x*-rays are a most important, and ofttimes a most essential, adjunct in the differential diagnosis. As etiological factors, the teeth, tonsils, prostate, gall-bladder, etc., should be borne in mind. Referring to the teeth, Dr. Rodman urged, if necessary, a careful *x*-ray picture, which frequently showed pockets of pus not otherwise discernible. When pyorrhea alveolaris is present, an examination of the pus, on a warm slide may show the presence of the ameba, when emetin might be employed to advantage. There is no excuse for confounding this disease with "rheumatism."

In discussing the patient suffering from Raynaud's disease, the three stages of (a) syncope, dead white and numb, (b) asphyxia, or "beef-steak" hand and (c) necrosis, or gangrene, were fully described.

The cases of empyema provided an excellent opportunity for the speaker to discuss the differential diagnosis of interlobular empyema, abscess, gangrene, bronchiectasis, subdiaphragmatic abscess, etc. Dr. Riesman called particular attention to the fecal odor of pus which is expectorated from subdiaphragmatic abscess, caused by the almost invariable presence of the colon bacillus, finding its entrance by way of a perforated gastric ulcer on the left side, or an appendix on the right side.

The case of dextrocardia, in a man of thirty, with transposition of the liver and spleen, proved especially interesting. The man was perfectly healthy in every respect.

X-ray treatment was suggested in the case of sarcomatosis, if the pathologist made the same diagnosis, but the prognosis was unfavorable.

Dr. Riesman answered the many questions asked during the course of the clinic, and the afternoon was made a most profitable one as a result of his extreme courtesy, and "endurance." By a unanimous vote of the members present, the distinguished clinician was given a rising vote of thanks and elected to honorary membership.

Julius H. Comboe, Reporter.

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ORIGINAL ARTICLES.

ARTHRITIC NEURITIS.

BY JOHN H. W. RHEIN, M.D.,

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(Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

For a number of years I have seen in my private practice as well as in the out-clinics of the hospitals with which I am connected a number of patients suffering from a well-defined syndrome, the exact nature of which has until recently never been entirely clear. The symptoms consist of pain in the arm and shoulder, associated with adhesions in the shoulder joint and resulting in a considerable degree of disability, not only on account of the pain and adhesions in the joint but on account of weakness in the muscles of the arm. The affection is usually unilateral but may occur on both sides more rarely. The local symptoms are grafted upon a general neurasthenic state.

Not until recently have I realized the true nature of the affection. My present view of this condition is that it is an expression of a neuritis of the brachial plexus in which the articular branches going to the shoulder joint suffer especially, and I have proposed the name "arthritic neuritis" for this affection which should be differentiated from a condition presenting somewhat similar symptoms which is actually an arthritis. The adhesions and pain around the joint in my opinion are due to the involvement of the nerve branches going to the joint, the adhesions being a trophic result.

At one time I looked upon these cases as examples of arthritis, probably rheumatic. X-ray examinations have not in any instance shown any articular changes however. The course of the disease is somewhat different from that pursued by the arthritic cases. In the later cases the atrophy is more marked, the pain disappears earlier, there is less general nervous phenomena and the *x*-ray shows articular change. The pain in the neuritic cases is more persistent, the onset is gradual, beginning with pain in the shoulder joint which extends to the pectoral region, to the elbow, and often to the wrist and fingers following the nerve distribution. There is tenderness over the nerve trunks. The pain increases in intensity and is in a few weeks' time accompanied with stiffness in the shoulder joint, the cause of which proves to be the formation of adhesions. There follow then some wasting and weakness of the muscles of the arm, especially the deltoid, triceps and biceps. Efforts to move the arm at the shoulder joint causes intense pain and in some cases also an involuntary spasm of the muscles of the shoulder girdle. Added to the local conditions there stand out prominently general symptoms in the nature of neurasthenic manifestations. The patient sleeps poorly, a comfortable position can not be found for the arm, the pain causes nausea, the general resistance to enduring the pain is lowered and anticipation of movements at the shoulder joint either voluntarily or by the examiner causes a state of painful apprehension. The patient is depressed, loses courage, is readily fatigued and is generally incapacitated.

The treatment of this disorder may be divided into general and local measures. A rest cure, complete or partial, is required for the relief of the general condition. Locally, electricity, massage and breaking up of the adhesions of the joint are indicated.

The galvanic current is given in the following manner. The negative pole is placed between the shoulders and the positive pole is stroked over the shoulder joint and over the entire arm using about four to six milliamperes. The treatment should occupy eight to ten minutes and should be given daily. Local as well as general massage is employed daily. The adhesions should be broken up gradually, daily treatments being given. Often the patient can not bear the pain which this procedure causes and it becomes necessary to employ an anesthetic, preferably nitrous oxid. The neurasthenic condition of the patient makes the management of the case difficult on account of the degree of pain which such an operation occasions, and it will be found necessary to repeat the operation two or three times at weekly intervals, being content not to break up all of the adhesions at any one time. Most of the patients recover, but in some instances the general condition of the patient interferes with the proper treatment, owing to the fact that they resist the breaking up of the adhesions so strenuously on account of the pain which it causes that heroic measure can not be continued.

The early recognition of this condition is essential as the prompt institution of the appropriate measures may prevent or at least modify the formation of the adhesions which is really the serious feature of this condition. Many cases I have no doubt develop permanent adhesions if not properly handled.

Dr. D. J. McCarthy described recently at the Neurological Section of the American Medical Association a somewhat similar condition in tuberculous patients.

These cases can readily be differentiated from an hysterical joint and from Charcot's joint, which is a rare occurrence in the shoulder joint. Tuberculous lesions also must be eliminated.

Goldthwait in *American Journal of Orthopedic Surgery,* 1908-1909, page 579, described a condition which probably corresponds to that observed in the cases described in my paper. Under the heading of brachial neuralgia or neuritis he described a condition in which there was pain usually in the ulnar nerve in slight people and in stout people in the distribution of all the nerves of the arm, associated with or without inflammation of the bursa about the shoulder and without pain on pressure over the nerves or other motor or sensory disturbances, outside of the pain. In these cases position relieved the pain which suggested a mechanical element in the etiology. The patients rest the arm upon pillows with the elbow raised from the side or in the sitting posture for sleep, or assume a forward position the arm resting upon a table and this in his opinion suggested that the condition was due to something more than a primary nerve lesion. Anatomical studies made it apparent that there was a drooping of the shoulder which strained the posterior muscles and allowed the head of the humerus to rest against the ribs. In such a position the ulnar nerve is subjected to pressure. In fat patients in whom the subcutaneous fat is in considerable amount the pressure is exerted upon all the axillary structures and the pain is distributed to all the branches of the brachial plexus. This anatomical condition he believes explains some of the obstinate cases of neuritis of the arm. In treating this condition he advises changing the forward position of the shoulder so that it is held erect. If there is bursitis present the relief is not so pronounced, but otherwise marked relief follows at once this mere change of attitude.

Case 1. D. M., aged fifty-seven, applied for treatment, January 10, 1914, complaining of a pain in the shoulder which extended down the outside of the arm and across the chest, dating three months previously. The pain sometimes extended to the ring and little fingers and resembled at times a "hot wire." Motion of the arm and shoulder joint increased the pain. The family history was unimportant. Her father died from some liver trouble at forty-five and her mother from carcinoma of the liver at eighty-two. Her previous history indicated a neurasthenic tendency. She had had pneumonia when twenty-five years of age and typhoid fever when a child. Four years previously she had an attack in which she had difficulty in walking and this was associated with a choking sensation during which time the jaws became rigid. A year previously she had consulted a throat specialist for a sensation of scratching in her throat as if there was a twig or a dried crumb in her throat. This caused her to clear her throat constantly and developed into a tic which had persisted to the time of her first visit.

For the last two years she had had a good deal of worry over business troubles and had been nervous and depressed.

Upon examination it was found that the left arm was weaker than the right. The dynamometer registered fifty on the right and fifteen on the left. She complained of pain in the deltoid and pectoral muscles and occasionally had pain extending down the forearm to the ring and little fingers. Motion in the shoulder joint was restricted. It was impossible to raise the arm higher than the right angle from the shoulder. This was in part due to the pain which it caused as well as to adhesions. There was some tenderness of the nerve trunks of the arm but no other sensory changes. She was emotional, apprehensive and depressed, sleeping poorly and was able to walk but short distances on account of general weakness and the occasioning of undue fatigue.

I placed her on a rest cure and gave at the same time massage, general and local, and galvanic current to the arm after the manner above described and broke up gradually the adhesions in the joint. An *x*-ray was not taken of this case as she improved so satisfactorily that there was evidently no articular disease.

Case 2. I. I., aged fifty-four, applied for treatment, September 25, 1913, complaining since June, 1913, of pain in and incapacity of the right arm and shoulder. The symptoms began after reaching forward to grasp an object. "Something caught her," and gradually after that pain developed over the shoulder and flexor and extensor surfaces of the elbow and above the wrist. It never extended into the hand. The shoulder joint gradually grew stiff and every effort to use the arm was attended with great pain. A jar of the body gave great pain extending from the hand up to the shoulder. The pain was worse at night, at which time she found it impossible to put the arm in a comfortable position, and interfered with sleep.

The muscles of the arm at the shoulder joint were somewhat wasted. She could not move the arm above a right angle voluntarily and efforts on the part of the examiner to elevate the arm at the shoulder was attended with much pain, much voluntary resistance and also an involuntary spasm of the shoulder girdle muscles.

The *x*-ray showed nothing abnormal.

The family history was practically negative. The father died of sunstroke and the mother of heart disease. There were three brothers well and a sister well. One sister died of cerebral hemorrhage at thirty-eight. The patient was neurasthenic complaining constantly of pain, and was depressed and hopeless about her recovery. She resisted all efforts on the part of the examiner to break up the adhesions and was afraid to have the arm moved or to move the arm voluntarily. There was tenderness over the deltoid and over the nerve trunks. The right grasp was distinctly weak as were all movements. The adhesions of the arm at the shoulder joint were broken up readily under nitrous oxid anesthesia on two occasions. Much pain followed each operation and the patient resisted passive movements strenuously. However they were persisted in and gradually she improved, much as to pain but not entirely as to adhesions. To the failure of the latter, though, should be attributed the resistance that the patient offered to the treatment on account of the pain caused, there appearing quite conspicuously a lowered resistance to bearing pain.

Case 3. B. K. D., aged forty-three, gave practically negative family and previous histories. She consulted me on March 4, 1914, complaining of pain in the left arm and shoulder which had begun several weeks previously but which seemed to be getting progressively worse. For the previous month the pain had become quite intense and prevented her using the arm, causing considerable disability at the shoulder joint.

Upon examination it was found that the patient complained of pain in the shoulder joint extending forward into the pectoral muscles and down the arm into the forearm. Movement of the arm at the shoulder joint caused apparently much pain and the arm could not be moved up above a right angle and even when moved to this position occasioned a good deal of outcry of pain. The grasp was not as strong on the left as on the right and there was some wasting of the deltoid, biceps and triceps muscles. There was some tenderness along the nerve trunks but no other sensory disturbances. Study of the shoulder joint by *x*-ray resulted in negative findings.

The patient was generally unnerved, the thought of moving the arm at the shoulder being almost unbearable. She complained also of a sense of internal trembling. The pain when the arm was forcibly moved at the shoulder joint caused nausea and even spontaneously at other times. She was depressed, could not sleep, her appetite was poor and she was very neurasthenic. Under galvanism and massage and general tonic treatment there was some slight improvement. At the end of eight months she developed severe headaches and after an effort to break up the adhesions she went to pieces nervously. She was then placed in bed and given a rest cure with considerable improvement in her general condition.

An effort was then made to break up the adhesions under gas, but she developed thereafter for forty-eight hours a distinct postanesthetic psychosis consisting of delirium of depressive type and soon after she refused any further treatment. (She finally recovered.)

Case 4. M. K., aged forty-two, applied to the Philadelphia Polyclinic Hospital, February 23, 1914, complaining of pain in the right arm dating three months previously. The pain extended to the wrist and the outside of the arm and forearm. She could raise the arm slightly above the shoulder only and could not put her hand back of her. Any movements of the arm at the shoulder joint were painful. There was some tenderness of the nerve trunks in the upper arm. The pain was worse at night and interfered with sleep. The power was diminished in all of the muscles of the arm and shoulder girdle. There was no atrophy appreciable but she was very fat and this may have masked any wasting. There was no sensory change otherwise.

An x-ray examination proved to be negative. Under galvanism, massage and breaking up of the adhesions gradually there followed marked improvement.

Case 5. M. D., aged forty-eight, applied to the Philadelphia Polyclinic Hospital, March 20, 1914, complaining of pain in the right arm and shoulder dating two months previously. There was no previous history of interest.

He was not able to lift the arm above an angle of forty-five degrees from the side voluntarily, though the arm could be passively moved to a perpendicular by the hand of the examiner and when this was done evidently some adhesions could be found in the shoulder joint. The pain extended from the shoulder in the region of the deltoid to the elbow and was very marked at night, preventing sleep. There was no tenderness over the nerve trunks nor apparent atrophy or change in sensation. The dynamometer on the right registered seventy and on the left ninety.

On September 21 examination showed that there were no adhesions in the joint, motion of the shoulder joint being perfect. There was some slight pain still present in the deltoid muscle but the patient was practically cured. An x-ray examination showed nothing abnormal in the shoulder joint except a separation of the clavicle from its scapular articulation. There was no disease of the bone however and the condition was probably congenital.

Case 6. L. A., aged forty-seven, on August 22, 1913, fell down and landed on her elbow. There developed then pain in the shoulder joint which extended down over the deltoid and to below the elbow, and later to the hand. There developed some disability of the shoulder joint which apparently was due to the pain which movements caused. There was little or no loss of power in the hand, although she was unable, for one reason or another, to use the arm at the shoulder joint.

Upon examination on November 24, 1913, there was some tenderness along the nerve trunks and some hyperesthesia to the pin point over the whole arm and fingers and hand. Adhesions had formed in the shoulder joint which prevented the arm being raised above a right angle. All motions at the shoulder joint were painful. There was no perceptible atrophy. She was emotional and could not sleep on account of pain which was constant in the shoulder and forearm.

An x-ray showed nothing abnormal in the shoulder joint. Gradual breaking up of the adhesions was practiced and daily application of electricity and massage associated with a partial rest cure.

The patient recovered entirely at the end of three months.

DISCUSSION.

Dr. J. Madison Taylor, Philadelphia: I am particularly glad to have heard this valuable contribution on a most practical subject. My own personal experience in arm pains, neuritis, etc., due to diverse causes, has occupied my attention for thirty years, and I presented a paper on the subject before the American Medical Association, three years ago, in which I referred to results in about fifty cases. I wish to emphasize the fact that the one essential method of learning the nature and curability of the cases of arm and shoulder pain is for physicians to take the trouble to examine each case carefully and acquire some deftness in applying simple tests based on the physics of shoulder girdle motion, relative resistance, rigidity, relaxation as well as tenderness and pain. By this means he will often find that conditions which had been protracted for months or even years were so simple as to be readily relieved. Others, of course will not, but will need expert help. In any event the nature and curability should be determined as early as possible, which is entirely possible by attaining some skill in examining the shoulder.

Many of the cases I reported were among physicians themselves and these were able to afford far more information as to the existing states.

The methods of relief I then recommended have served me satisfactorily; some others are now added. By judicious palpation and other means of apprisiug the *status quo* the pressure will often promptly reveal some simple lesion readily relieved even after the arm has been disabled for years.

Symptoms of the relatively rare and grave conditions described by Dr. Rhein differ so little from mild but easily curable states of fibromyositis or simple or traumatic neuritis as to readily obscure the issue. By palpation, estimating the points of tenderness and degrees and forms of limitation of motion, active or passive, the true nature can often be readily determined. Occasionally the only recourse is anesthesia.

Dr. Robert N. Willson, Philadelphia: I want merely to suggest to Dr. Rhein and to other neurologists, studying conditions identical with and similar to those described in the paper, the possibility of the existence of some obscure focal infection as the underlying cause. The character of the joint lesions, also the neuritis, offers no difficulties to their explanation on the basis of a bacteremia; in fact, the clinical course of the condition would seem to indicate its probability. It would seem as though it would be well worth the clinician's while, in the presence of such an arthritic neuritis, to search assiduously for adenoids, diseased tonsils, chronic appendicitis, pus tubes, or some other likely focus of chronic infection. It may easily be that such an investigation, if carried out according to the new and effective methods of Rosenow, may explain and assist in the cure of many otherwise obscure cases.

Dr. Henry Finkelpearl, Pittsburgh: Dr. Rhein gave us a good detailed description of the pathology and a good clinical picture of these cases but he slightly exceeded the speed limit, while speaking of the treatment, when he spoke of electricity, one of the most important agencies in the treatment of joint pains, mentioning only the galvanic currents. While the galvanic current gives good results in these, the static has in my experience given better results in some cases. The static current may also be used to determine the seat of greatest inflammation of a nerve or branch by placing a large electrode over the painful area, connecting it with a positive pole, grounding the negative and turning on a current which will cause pain. This pain will be felt more severely over the most offending part of the nerve. This electrode can then be removed and a smaller one placed to cover the area of severest pain and turn on as much current as the patient can tolerate.

Dr. Rhein, closing: I am glad to hear the discussion of these cases, and in reference to Dr. Taylor's remarks I am still convinced that these cases are not examples of arthritis and can be best explained on the basis of a neuritis.

Answering Dr. Willson's remarks I would say that the presence of a toxin or infection explains the neuritis quite as satisfactorily as an arthritis.

I can only repeat finally that the form of electricity which gives the best results is the galvanic.

A FORM OF DIABETIC COMA, NOT DUE TO THE "ACETONE BODIES."*

BY JACOB ROSENBLOOM, M.D., PH.D.,
Pittsburgh.

(Read before the Section on Medicine `of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

During the past five years I have had the opportunity of studying eight cases of diabetic coma. Five of these cases were of the classical type with excretion in the urine of large amounts of acetone, diacetic acid and beta-oxybutyric acid and high ammonia-nitrogen. The other three cases, however, were so different that they certainly show that we must recognize a type of diabetic coma not due to intoxication with the acetone bodies and possibly due to intoxication with amino-acids, polypeptids, or unknown substances formed in the intermediary metabolism.

Before discussing these cases it will be of value briefly to present the growth of our modern conception of the chemical factors that play a part in the causation of diabetic coma.

The occurrence of coma in diabetes seems to have been first recorded by v. Dusch in 1854. Petters[1] in 1857 discovered what he thought was acetone in the urine and blood of a diabetic patient. This finding was confirmed later by Kaulich[2] and by Rupstein.[3] Gerhardt[4] in 1865 showed that diabetic urine often gives a port wine color on the addition of ferric chlorid, which he attributed to the presence of aceto-acetic ether in the urine. Buhl[5] claimed from experiments carried out on rabbits that this substance was the cause of diabetic coma. These conclusions could not be confirmed by Quincke.[6] Von Jaksch[7] showed that Gerhardt's reaction was due to aceto-acetic acid and it was then claimed that diabetic coma was due to this substance, but many workers were able to show that it was only slightly toxic. Stadelman[8] and other workers, on comparing the acids and bases in the urine of certain cases of diabetes, found the bases to be present in large excess and that this increased excretion of bases was due to the presence of some acid, which Stadelman claimed was crotonic acid. Minkowski[9] and Kulz,[10] however, showed that the crotonic acid isolated by Stadelman was formed from beta-oxybutyric acid and considered this substance to be the cause of the symptoms of diabetic coma. The experiments of Waldvogel[11] and Desgrez and Soggio,[12] and others, showed that this substance was also only slightly toxic. Ehrmann,[13] however, claims to have produced typical coma with the sodium salts of butyric and beta-oxybutyric acid, but against these experiments we may say that as high as forty grams of beta-oxybutyric acid have been found in the day's urine of a non-diabetic, without any signs of intoxication. Sternberg,[14] thinking that beta-amidobutyric acid was the mother to be the cause of coma. Gruhe[15] confirmed these findings. Marx[16] thought coma was due to the specific toxic action of the acetone bodies. Esser and Loewy[17] claimed coma was due to a specific poisoning by butyric acid. Porges[18] thinks some of the symptoms of diabetic coma are due to the lowered carbon dioxid tension of the blood.

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*From the Biochemical Laboratory of the Western Pennsylvania Hospital, Pittsburgh.

[1] *Prag. Vierteljahr.*, 1857, lv., 81.
[2] *Prog. Vierteljohr.*, 1860, lxvii., 58.
[3] *Centr. f. d. med. Wissen.*, 1874, xii., 92.
[4] *Wien. med. Presse*, 1865, vi., 673.
[5] *Zeit. f. Biol.*, 1880, xvi., 413.
[6] *Berl. klin. Woch.*, 1880, xvii., 1.
[7] Ueber Acetonurie u. Diaceturie, Berlin, 1885.
[8] *Arch. f. exp. Path. u. Pharm.*, 1883, xvii., 419.
[9] *Arch. f. exp. Path. u. Pharm.*, 1884, xviii., 35, 147; 1885, xix., 209; 1886, xxi., 41; *Berl. klin. Woch.*, 1892, xxix., 90; Mitt. a. d. med. klinik zu Königsberg, 1888, 174.
[10] *Zeit. f. Biol.*, 1884, xx., 165.
[11] Die Acetonkorper, Stuttgart, 1903.
[12] *Compt. Rend. d. l. Soc. d. Biol.*, 1907, lxiii., 288.
[13] *Berl. klin. Woch.*, 1913, l., 11.
[14] *Zeit. f. klin. Med.*, 1899, xxxviii., 65.

The observations of Walter[19] also weakened the theory of specific poisoning by the acetone bodies. He was able to produce symptoms like diabetic coma by giving animals phosphoric or hydrochloric acids. On the basis of the experimental work briefly reviewed, the present theory relative to the cause of diabetic coma is that the acetone bodies (acetone, diacetic acid and beta-oxybutyric acid) produce diabetic coma not by any inherent toxic power, but owing to the fact that they withdraw alkalies from the body,[20] and thereby produce an internal suffocation or "acidosis" (Naunyn).[21] The reduction of the alkalinity of the blood and the reduction in the carbon dioxid of the venous blood and the fact that the administration of alkalies will diminish or stop symptoms of diabetic coma, also that the coma appears when the amount of organic acids in the urine is highest, and is absent when there is little or none of them in the urine, and that alkalies, given, cause an increased excretion of organic acids, speak in favor of this view.

However, it has been pointed out by Kraus,[22] Rumpf,[23] Lépine,[24] and others, that cases of diabetic coma have been noted without any increase in the elimination of organic acids in the urine and that the alkaline therapy has not the effect it should have if the coma were always the result of an acid intoxication. Many cases of diabetes have been reported where very large amounts of the acetone bodies have been excreted for years, without evidence of any marked symptoms. Indeed Naunyn has suggested that coma in cases without increased acid formation may be due to the presence of some unknown toxin which acts on the cerebral cells, especially the respiratory center. Klemperer thinks that both the coma and the acid production in diabetes are due to the presence of such a toxin.

Naunyn explains the relative failure of alkaline therapy on the basis that there is too large a quantity of the acid substance to be neutralized. Others claim that the benefit of the alkaline therapy is that it facilitates the excretion of the acetone bodies.[25] Hilton-Fagge[26] in 1874, by the intravenous injection of a mixture of sodium phosphate and sodium chlorate, an acid solution, reported a magic cure in a case of diabetic coma. Cure lasted three days. Young[27] postponed death for eleven days by venesection followed by infusion of plain saline. These facts speak against our present conception of the cause of diabetic coma.

The three cases of diabetic coma that I have studied, which differed so completely from our modern idea of acidosis as the cause of coma, may be considered together in this report. They were all of the severe type, with no tolerance for carbohydrate, and with a restricted protein intake there was no lessening of the glucose output. They were studied for a period which varied from one week to two months. During this time the urine contained a normal amount of ammonia-nitrogen and showed no trace of acetone, diacetic acid or beta-oxybutyric acid. There was no evidence of any kidney pathology. The urine contained excessive amounts of colloidal nitrogen, neutral sulphur and amino-acids. Death occurred in typical diabetic coma. It might be claimed, however, that the acetone bodies were not excreted, but retained. In the last case studied 200 cubic centimeters of blood were taken shortly before death. Only faint traces of acetone, diacetic acid and beta-oxybutyric were found. The nonprotein nitrogen of the blood serum was normal in amount.[28]

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[15] *Arch. f. expt. Path. u. Pharm.*, 1900, xliv., 349.

[16] *Zeit. f. klin. Med.*, 1910, lxxi., 165.

[17] *Zeit. f. klin. Med.*, 1911, lxxii., 496.

[18] *Wien. klin. Woch.*, 1911, xxiv., 1147.

[19] *Arch. f. exp. Path. u. Pharm.*, 1877, vii., 148.

[20] As Sellards nicely puts it, in acidosis the acids are destroyed by neutralization, while in health, they are destroyed by oxidation.

[21] Der Diabetes Mellitus; Wien., 1906.

[22] *Zeit. f. Heilkunde*, 1889, x., 1906; *Arch. f. exp. Path. u Pharm.*, 1889, xxvi., 188; *Prag. med. Woch.*, 1899, xxiv., 498.

[23] *Berl. klin. Woch.*, 1895, xxxii., 185, 669, 700.

[24] *Rev. d. Med.*, 1887, xii., 224; 1888, xiii., 1004.

[25] See Gigon; *Erg. d. inn. Med. u. Kinderheilk.*, 1912, ix., 206; Ewing, *Arch. Int. Med.*, 1908, ii., 330; Magnus-Levy, *Ergeb. inn. Med.*, 1908, i., 374.

[26] Guys Hosp. Reports, 1874, series 3, xix., 173.

[27] *Brit. Med. Jour.*, 1903, i., 544.

[28] It should be remembered, however, that Peabody (*Arch. Int. Med.*, 1914, xiv., 236) has shown that the development of acidosis in renal disease bears little or no relation to the amount of nonprotein nitrogen in the blood. The latter may be extremely high without marked signs of acidosis being present. These results are confirmed by the experiments of Poulton and Ryffel (*Jour. Physiol.*, 1913, xlviii., Proc. Phys. Soc., p. xlvii.). It might be claimed that the three cases of atypical coma recorded in this paper were cases complicated with renal insufficiency. There were no reasons clinically, however, to consider them

This case is especially interesting on account of the fact that about fifty hours before death, showers of granular casts were present in the urine. The urine was cloudy, due to the presence of such an enormous number of casts. As will be recalled, this finding has been described in the typical acidosis coma.[29] Coombs[30] has lately described a type of acidosis terminating chronic myocardial disease and characterized by almost complete absence of acetone, diacetic acid and beta-oxybutyric acid from the urine, by absence of glucose, or history of previous diabetes. The two patients were on an abundant diet, there was no vomiting nor any other cause of starvation, nor was any drug given that might account for the symptoms. Sellards[31] has shown that cases of diabetes occur in which the excretion of ammonia, acetone and related bodies is normal, but the titratable alkalinity of the blood is decreased and the tolerance of bases is increased, affording proof of a definite impoverishment in bases in these cases. If this argument proves to be correct, we must then think of the possibility that the type of diabetic coma described in this paper is also due to a lack of bases[32] in the body, possibly owing to the production of some as yet unidentified acid.

Labbe[33] is also of the opinion that many of the features of diabetic coma point to an intoxication with polypeptides. He thinks that while diabetic coma and acidosis are closely related, they are due to different mechanisms. Loeffler[34] has found a high amino-acid excretion in diabetes and thinks that it plays an important part in the production of acidosis. Hall[35] and also Mohr[36] have found an increased output of amino-acids in the urine in diabetes. Lobbe and Bith[37] have also found an increased excretion of amino-acids in cases where a pathological destruction of proteins is going on and also in conditions of acidosis, whether diabetic or of another nature. Hugouneng, Morel and Froment[38] studied the urine, blood and cerebrospinal fluid in a case of diabetic coma. They found a low amount of urea-nitrogen in comparison to the other forms of nitrogen. This was especially marked in the cerebrospinal fluid and they conclude that coma in diabetes may be due to the accumulation of toxic nitrogenous compounds in the system as well as the acetone bodies. Revillet[39] has also described a case of diabetic coma without acetonuria in a case of diabetes. Pribram and Loewy[40] suggest that the abnormal products of protein cleavage are responsible for diabetic coma.

The observations recorded in this paper show the necessity for changing our views relative to the exciting factors present in all cases of diabetic coma, and the need for individual study of each case of diabetes along the lines suggested in this paper. The frequent inadequacy of the alkaline therapy can be explained on the basis of the fact that the acetone bodies are not always the important factors in the causation of the symptoms of cases of diabetic coma, but that considerable attention must be paid to the study of the excretion of amino-acids, polypeptids, and certain unknown substances in this disease.

DISCUSSION.

Dr. Lawrence Litchfield, Pittsburgh: The problem which Dr. Rosenbloom has so ably formulated is a real one, the solution of which will be of inestimable value.

During the past year I have had five diabetic patients die in coma, I do not say diabetic coma because all did not exhibit the characteristics which we are accustomed, rightly or wrongly, to consider pathognomonic of diabetes.

My percentage of coma cases is high, because only the worst cases remain in the city under my care, the others being sent back to the physician who referred them to me with such advice and suggestions as I am able to offer.

The amount of acetone bodies in the urine varied considerably in the different cases, but of course acetone bodies in the urine can not harm the patient any more than uric acid in the urine.

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of such a nature, and it must be borne in mind that, in these cases recorded in this paper, we are not only dealing with an abnormal metabolism of carbohydrates and fats, but also with abnormal katabolism of protein, no doubt with the formation of intermediary metabolic products of an unknown nature and unknown toxicity.

[29] Kulz: Dissertation, Marburg, 1885. Ebstein; *Deut. Arch. f. klin. Med.*, 1881, XXVIII., 143. Waldvogel: *Centralbl. f. inn. Med.*, 1898, 845; *Beitr. z. ges. chem. Phys. u. Path.*, 1906, VII., 150; *Zeit. f. klin. Med.*, 1899, XXXVIII., 506.

[30] *Brit. Med. Jour.*, 1914, I., June 6.

[31] *Johns Hopk. Hosp. Bull.*, 1914, XXV., 101, 141.

[32] Work is in progress on the excretion of bases in cases of diabetic coma without the presence of the acetone bodies in the urine.

[33] *Presse Medicale*, 1912, XX., 270; *Rev. d. Med.*, 1912, XXIII., 176; *Annal. d. Med.*, 1914, No. 2.

[34] *Zeit. f. klin. Med.*, 1913, LXXVIII., 483.

[35] *Biochem. Jour.*, 1906, I., 241.

[36] *Zeit. f. exp. Path.*, 1906, II. 463, 467, 481; *Deut. med. Woch.*, 1905, XXXI., 195; *Zeit. f. klin. Med.*, 1904, LII., 337.

[37] *Arch. des Malad. de appar. dig. et de la nutrit.*, 1914, VII., 681.

[38] *Lyon Med.*, 1913, XLV., 897.

[39] *Lyon Med.*, 1914, Apr. 12, No. XV.

[40] *Zeit. f. klin. Med.*, 1913, LXXVII., 384.

While we may assume a balance between the amount of acetone bodies in the circulating blood and acetone bodies in the tissue cells, we can not assume any such balance between the amount of acetone bodies in circulating blood and the amount of acetone bodies in the urine. We need very much a practical clinical test for acidemia.

My personal attitude toward ketonuria has varied greatly during the past few years, for a time I neglected it unless the patient exhibited signs or symptoms of acidosis,—drowsiness, air hunger, etc., until the glycosuria had been brought under control. Now, however, I feel that in the presence of acetone bodies or a large amount of ammonia nitrogen in the urine and probably in all cases of true diabetes, no sudden changes should be made in the patient's diet. Carbohydrates should be reduced gradually. Alkalies should be given until the urine is neutral or slightly alkaline, and the effort should be made to employ basic foods rather than foods whose metabolic products are acid.

The question of basic foods is one which promises great aid in treating these conditions. It was referred to by Dr. Mendell in his recent paper at Atlantic City, and will be treated more extensively by Dr. Blatherwick in an early number of the *Archives of Internal Medicine*.

When we can properly employ basic foods we may avoid the frequent disappointments attendant on the alkaline treatment now in vogue.

Dr. Rosenbloom, closing: Two important points brought out in the paper are the necessity not to consider negative acetone and diacetic acid reactions in the urine as eliminating a possible acidosis and the necessity of seeking in the body the presence of toxic substances formed in the intermediary metabolism.

ROENTGEN RAY EXAMINATION OF ACCESSORY SINUSES.

BY WILLIS F. MANGES, M.D.,
Philadelphia.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

All of the accessory sinuses in a state of health contain air, the walls are of bone, and their outlines are sharply defined. Air offers practically no resistance to the passage of roentgen rays while bone possesses a high degree of opacity. On the roentgenogram then we find a marked contrast between the shadows of the air-containing cavities and their bony outlines.

If a sinus contains a foreign substance whose density is greater than air the bony outline becomes less distinct on the plate, the contrast between the shadow of the sinus and the surrounding parts less marked. A filled sinus on one side differs by comparison with a healthy mate according to the amount of the foreign substance it contains.

When the rays pass posteroanteriorly the plate shows the approximate lateral and vertical diameters of the sinuses, and in the lateral projection the approximate anteroposterior diameters.

Technic. A few words about the method of procedure are essential in order that you may appreciate the nature of the findings, and the possibilities of error. Dr. E. W. Caldwell of New York in 1907 was the first to describe an accurate technic for the roentgenographic examination of the accessory sinuses. He placed the sensitive plate on the face so that it would be at right angles, in both lateral and vertical planes, to Reed's base line. The *x*-ray tube was placed back of the head so that its focus point was eighteen inches from the plate, in the sagittal line and above the base line sufficiently to form an angle of twenty-five degrees with the base line, or an angle of sixty-five degrees with the plate. The plate exposed after such a sitting shows, from above downward, the frontal sinuses, the ethmoid cells with the sphenoid cells superimposed, and the maxillary sinuses.

The petrous portion of the temporal bones obscure somewhat the shadows of the maxillary antra so that a second exposure in the posteroanterior direction is desirable. This is made so that the rays pass in the median line, through the level of the axis perpendicular to the plate. In this way none of the bones of the skull interfere, and the cervical vertebræ are not of great density.

The ethmoid and sphenoid cells are not isolated in this way so that other exposures are required. Pfahler isolates the sphenoid sinuses by an oblique exposure projecting the shadow of the left sphenoid through the left orbit and the right sphenoid through the right orbit.

MacFarlan places the plate on the anterior surface of the neck and extended chin, then passes the rays from above downward so that the shadow of the sphenoid sinuses lie just under that of the chin.

Bowen places the plate on the very much extended top of the head and passes the rays from below upward.

The writer depends largely upon postero-anterior stereoroentgenograms for the isolation and study of the sphenoid cells.

Stereoscopic plates in lateral exposure help greatly to differentiate between ethmoid and sphenoid infection. This was clearly shown by Percy Brown.

Limitations. It is necessary, for the safety of the patient, to use x-ray tubes that maintain a constant fairly high vacuum, since the amount of exposure necessary to produce good roentgenograms with soft tubes is apt to produce alopecia. Reëxaminations should not be made within two or three weeks.

The patient must be in thorough accord with the study since he is required to remain absolutely still throughout the entire procedure.

By careful experiments Caldwell found that it was impossible to distinguish differences between shadows of sinuses filled with water, pus, mucus, mucous membrane, or other soft tissue, so that we can not make a differential diagnosis unless the nature of the disease is otherwise revealed.

No attempt should be made mechanically to empty a sinus just before the roentgen ray examination, since with fluid or pus removed from a diseased sinus it will appear on the plate as a normal sinus.

Very much thickened mucous membrane is sufficient to render a sinus more opaque than its healthy mate, but plates of the highest order are required to show such fine details. Children seldom come to us for such study, and it is well, for they are difficult to control.

Taking the sinuses separately let us consider the nature of the findings: The frontal sinuses vary greatly as to size; they may be entirely absent on one or both sides, small on one side and large on the other, or they may be subdivided by bony septa into several distinct cells on one or both sides. This knowledge in a given instance is of the utmost value to the surgeon prior to operation on the sinuses. If only one frontal sinus is occluded and the other is present and air-containing, then the roentgen diagnosis is positive, for as we have said there is great contrast between the opacity of air and fluid or tissue. If the sinuses are small and have thick walls it is sometimes difficult to determine whether both are diseased or healthy. The bony walls of the sinus are but seldom involved in ordinary inflammatory processes but may become attacked as a result of injury or by extension of necrosis, malignancy or gummata of adjacent structures. We have on two occasions observed the presence of small osteomata in the frontal sinuses but were unable to judge of their clinical significance. Fractures occur occasionally and it is important to determine if the posterior wall remained intact.

The maxillary sinuses are more constant in their manner of development, but they too are occasionally subdivided. The roentgen diagnosis is usually as to the presence or absence of foreign material. These sinuses are more frequently the seat of malignancy, of infection by extension from alveolar abscess, or involvement in dentigerous cysts, so that these sinuses offer a greater field for differential diagnosis by means of the roentgen rays.

Our field for usefulness in disease of the ethmoid cells is much more limited than in the case of the other sinuses, for the reason that they are very irregular as to number, size and distribution, their shadows are intermingled regardless of the angle of exposure, and their walls are of very thin bone easily transradiated. However, good quality of roentgenograms made in Caldwell's position will at least show a difference between the shadows of normal ethmoids on one side and occluded cells on the other side. Stereoscopic roentgenograms are still more accurate for the reason that the detail and contrast are practically doubled and foreign shadows are more readily isolated by reason of the perspective obtained. Lateral stereoscopic plates are also important to exclude sphenoid disease.

The sphenoid sinuses again frequently show marked difference in size and position, although it is extremely rare that even one of them is absent. Their depth from the surface makes roentgen examination difficult, and, although there are numerous forms of technic the writer has seen only a very few cases in which the roentgen diagnosis was of positive value in determining the presence of fluid in one or both of these sinuses. The *x*-ray study of the sphenoid cells becomes a procedure of the utmost importance, however, in cases of pituitary disease, since tumors or hypertrophy of this gland destroy the roof of the sinuses and invade them, or they offer a course of surgical access to the gland.

Errors in roentgen diagnosis of sinus conditions occur and are due most frequently to faulty technic. For example, if the focus tube is placed a little to one side of the sagittal line the anterior ethmoid cells of that side will be hidden by the nasal bone and the posterior will be projected even to the opposite side. The maxillary antrum of one side will be obscured by the petrous portion of the temporal bone or the cervical vertebra while the opposite antrum shadow will be isolated and appear in marked contrast to its hidden mate. Again, the plates must be of contrastive well-penetrated quality or the sinus shadows will be so pale as to seem airless.

THE SIGNIFICANCE OF PAIN IN THE LOWER BACK AND LEGS FROM THE ORTHOPEDIC STANDPOINT.

BY DAVID SILVER, M.D.,
Pittsburgh.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

Backache and leg pains are very common complaints. This no doubt explains in part the scant attention too often paid them by both physician and patient. Very frequently, too, such complaints are dismissed with the fictitious diagnosis "rheumatism" which here, as in the case of chronic arthritis, flat foot, and other affections, has done so much to impede diagnostic progress. Yet these symptoms merit our closest attention, for the causation of pain in the lower back and legs, that is, in the distribution of the lumbosacral plexus, is unusually varied, the course frequently most obstinate, and the diagnostic problems presented often among the most complex and interesting in medicine.

System, of which one hears so much in the business world of to-day, is just as essential in medical work if a high percentage of diagnostic successes is to be attained; it is the only thing that will save one on those unavoidable days when the brain works sluggishly. Some simple, and so easily remembered, grouping of the possible conditions and a routine method of examination will prevent many humiliating mistakes.

To begin in the most elementary manner, it is well to visualize the course of the lumbosacral nerves and to remind oneself that pain may be produced by irritation of any portion of the nervous arc. Thus the irritation may be (*a*) within the nervous tissue of the spinal cord itself or the nerve itself; (*b*) in the course of the fibers between the cord and their exit from the intravertebral foramen; (*c*) between the foramen and the exit from the abdominal or pelvic cavities, and (*d*) in the course and distribution of the nerve.

The proximity of the abdominal and pelvic organs and of the important sacroiliac articulations make the pathology of this region especially varied. The various affections may be broadly classified in four groups: (I.) Organic nervous diseases, (*a*) spinal cord disease, as tabes and multiple sclerosis, etc.; (II.) osseous lesions; (III.) ligamentous and muscular affections; (IV.) diseases of the abdominal and pelvic organs.

As regards the first group the ordinary examination of the reflexes will usually be sufficient to guide us correctly, yet it is surprising how frequently this is neglected.

With reference to the fourth group it is certainly true that the general tendency is rather to overestimate than to underestimate the importance of abdominal and pelvic affections as active causes of backache and leg pains, and especially is this true as regards gynecological conditions; it has been suggested that in many of these latter cases the pain may arise secondarily through the abnormal posture induced in the effort to relieve pressure on tender or inflamed organs. Certainly it is no uncommon occurrence to meet cases in which backache or leg pains have persisted after entirely satisfactory abdominal sections only to be relieved on the institution of measures designed to overcome ligamentous and muscular strain. It is well, therefore, while realizing the importance of disease of these organs in producing pain in the region under discussion not to forget that there are many other causes and to weigh carefully the evidence in each case.

The osseous, ligamentous and muscular lesions (Groups II. and III.), comprising the orthopedic conditions proper, embrace a variety of affections which merit consideration in every case. To be considered are: (1) Tumors: (2) infections, acute and chronic; (3) static derangements, (*a*) developmental anomalies; (4) traumata, both recent and ancient; (5) sacroiliac affections.

It is interesting to note that the various affections mentioned produce pain in three ways: (1) Through tension, as in an expanding tumor, (2) through pressure, as in inflammatory exudates, bony thickenings, etc., and (3) through stress and strain, as in static derangements.

Tumors. The tumors need only to be mentioned. Secondary carcinoma is the most important since the symptoms resemble closely those of spinal tuberculosis; a distinguishing feature is the fact that pain is not usually relieved by those measures which have proved so efficacious in Pott's disease.

Infections. In considering the various chronic infections it must always be borne in mind that tuberculosis of the spine is much more frequent in adults than formerly recognized and that the symptoms are often very obscure. On account of the greater size and hardness of the vertebral bodies bone destruction progresses much more slowly than in childhood; hence a kyphosis may be absent or is late in appearance, while the symptoms generally are usually much less distinctive. It is no uncommon thing, as is well known, for children to be treated for gastric disorders when the actual trouble is a middorsal caries and yet, strange to say, we often forget that pain is referred in the adult in exactly the same manner. It is a sad commentary on our thoroughness that practically every case of adult spinal caries is treated for one or even many years for various supposed ailments, passing through many hands, before the actual condition is recognized.

Infections other than tuberculous and specific account for a large number of the obstinate cases of the condition under discussion. Our knowledge of acute and subacute infection of the spinal tissues has been greatly increased in recent years through the careful study of the occurrence of spinal involvement as a complication or sequela of the various infectious diseases. Of these the so-called "typhoid spine" has been the most fully reported and a study of its literature is the most helpful in showing the variety of symptoms that may be produced by such an infectious process. In these cases "pain in the back was the constant symptom and this was associated with referred pain in fifty-four per cent. of the cases."[1] "The explanation of the occurrence of spinal involvement as a complication or sequela of the various infectious diseases is to be found in the frequent presence of the specific organism in the marrow of the vertebræ; it is to E. Frankel that we are especially indebted for this knowledge." The important work, too, which has been done on the relationship of chronic foci of infection to bone and joint disease has shed much light on the subject of backache and leg pains; that such foci may under favorable conditions give rise to spinal infection all admit. Some of the most obstinate sciaticas I have seen were clearly due to spinal infection localized apparently near the foramina, and in some of these it was possible to demonstrate periosteal thickening by the *x*-ray. A study of these known infectious cases must lead to the conclusion that many others in which no definite infectious cause can be determined must still be of this nature since their symptomatology is similar to that in the ones of known origin. That a great variety of bacteria may give rise to spinal inflammation is evident both from clinical observation and pathological findings.

Static Derangements. A wonderful advance has been made in our knowledge of backache and leg pains through the recent studies in postural defects. For some it seems hard to accept that a simple abnormality of posture may give rise to persistent and obstinate pain in the back or legs, yet the reason is not hard to find. I have been greatly helped to a better understanding of the subject by comparing it with the corresponding condition in the foot.

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[1] Silver, D.: *Am. Jour. Orth. Surg.*, 1907, v., p. 194.

The factors which produce pain in weak and flat feet have been fairly definitely determined. Certain types of feet are recognized as more likely to give rise to symptoms; these are the high arched foot, the low arched foot, and the relaxed, loose-jointed type. We know that in a given case pain over the origin of the plantar fascia may arise without any abnormality of posture through simple muscular insufficiency, either through lack of muscular development, deficient nerve tone, or excessive load. We know again that a deviation from the normal foot posture will usually sooner or later give rise to pain, yet on the other hand a considerable defect may occasionally persist for years without symptoms provided the muscular development and nerve tone of the individual be maintained at the proper level. We recognize fascial, ligamentous, tendinous, and muscular, occasionally even bony, points of tenderness, dependent upon the degree of strain exerted upon the different tissues. We understand the effect of trauma in lowering local resistance and so producing remote as well as immediate symptoms. And finally we see the effect of infection in acting as the exciting cause of pain in the feet, as for example in the painful feet which occasionally follow an attack of tonsillitis and in those occurring as a complication or sequela of gonorrheal infection.

Similarly in the back are recognized certain types of figure in which greater muscular exertion is required to maintain the upright position and hence in which pain, the expression of stress and strain, is more likely to appear: these are the too hollow back (the over-feminine type of Reynolds) and the too flat back; the congenitally relaxed and loose-jointed back is also a deviation from the normal that is potential for trouble. Since the upright position must be maintained by muscular effort, it follows that even without any abnormality of posture discomfort and pain may arise through poor muscular development, lowered nerve tone, or excessive demands. A defective posture may persist for years without producing symptoms as long as the muscular development and nerve tone are sufficient, but when the tone is lowered by trauma, infection or general debility symptoms are likely soon to appear. Just as in the case of weak and flat feet there are certain points where pain and tenderness are commonly met, as (*a*) at the root of the spine, that is, near the lumbosacral junction, (*b*) over the lumbar muscles, (*c*) between the shoulders over the origin of the trapezius muscles, and (*d*) at the base of the neck over the ligamentum nuchæ, for these are the points where the most strain is usually exerted.

Postural defects do not, however, act only in the upright position but their effects are seen both in sitting and lying. Stenographers, seamstresses, and desk workers generally easily fall into an incorrect sitting attitude, while the backache complained of by the bedridden and the very ill is usually simply the expression of ligamentous strain due to muscular relaxation, the overfeminine type of figure being more likely to give symptoms in the prone position.

Developmental Anomalies. There are certain developmental anomalies which have a considerable influence in increasing stress and strain. It is surprising in a study of a large series of *x*-ray negatives of the lower spine to see how frequently the last lumbar vertebra varies from the normal. Differences in the size and shape of the transverse processes, too close approximation or even actual articulation of the transverse process with the sacrum, fusion of the process with the sacrum on one side and not on the other, and variation in the direction of the articular facets of the two sides are some of the anomalies seen and it is evident that they will act to produce increased strain.[2]

Trauma. As regards trauma attention needs to be called only to one or two well-known features. Injuries to the fascia and ligaments are notoriously slow in healing, while to afford proper protection to the spine in the upright position is more or less irksome to the patient and inconvenient for the physician; the result is that injuries in which it can be proven that fracture has not occurred are usually very insufficiently treated both as to time and method, and the too early exposure of the affected part to the stress and strain of daily use delays or even prevents normal repair.

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[2] Goldthwait, J. E.: *Am. Jour. Orth. Surg.*, 1913, x, p. 309.

A second point to be remembered is that injuries not sufficient in themselves to cause more than passing notice may through the lowering of the local resistance afford opportunity for the setting up of infection or allow a postural defect for which the individual was previously able to compensate to become active.

Sacroiliac Affections. In considering sacroiliac affections certain anatomical features must first be recalled. "The sacroiliac articulation partakes of the nature of both a true and a half joint,"[3] that is, we are dealing with a modified true joint and not with a synchondrosis as formerly held. The chief modification consists in the slight amount of motion permitted, this amount being determined under normal conditions by its strong ligaments and the character of the reciprocal irregularities of its articular surfaces. The sacrum is not really a keystone, with the mechanical advantage which this would imply and which the important position it occupies would seem to demand, but is in reality suspended from the iliac bones by the strong posterior ligaments. The vertical direction of its articular surfaces is distinctly unfavorable as compared with the horizontally placed surfaces of the knee and ankle and with the ball-and-socket joint at the hip, while the muscular support is relatively slight. Mechanically, therefore, these joints are seen to be at a disadvantage in sustaining the weight of the body, in resisting injury in falls upon the feet and buttocks or upon the head, and in twists of the pelvis. Finally, the relatively close proximity of the lumbosacral cord to the anterior surface of the articulation is to be noted.

If we admit that the articulation partakes of the nature of a true joint, then we must expect to meet the same pathological processes as in other joints, namely synovitis, arthritis, periarthritis, contusions, sprains, and dislocations, and that these occur seems to me beyond question; also that with such pathological processes there may be an associated irritation of the lumbosacral nerves, giving rise to pain along the course of the sciatic, appears equally clear.

There is, however, some ground for the dispute as to the frequency of the occurrence of relaxation and slipping of the sacroiliac articulations. It must be freely admitted that the diagnosis of sacroiliac relaxation has been much overworked in certain quarters, and perhaps especially in damage suits, yet this is no more than might be expected. As Cotton[4] has well said, "This complaint, well attested in certain cases, has attained a prominence of late which is probably in part fictitious—this prominence represents the usual psychic reaction when a condition previously ignored comes to be recognized." Many of the cases carelessly diagnosed as sacroiliac relaxation are without doubt, as Lovett[5] has claimed, simply instances of static backache, the lumbosacral junction being naturally one of the regions most exposed to strain in postural defects. Yet that undoubted cases of excessive motion in these joints, presenting both subjective and objective symptoms of definite character, are relatively frequent has been in my own experience proved beyond question. In a joint, which nature has plainly indicated is not intended to have more than a minimum of motion, any marked increase is certain to produce strain and traumatism; a loose joint is as much of a mechanical defect in man as in a machine. Any case in which clicking or grating can be demonstrated during normal movements has, in my opinion, a pathological amount of motion for that individual. It is generally admitted that such an increase in motion takes place toward the end of pregnancy; if so, then it is hard to see why it may not occur in various pathological affections which produce long-continued pelvic congestion. If a compensatory increase of motion may take place when ankylosis of the hip has occurred, then it is reasonable to expect other factors to be capable of producing the same result, such, for example, as severe or repeated moderate traumatisms, especially when associated with a lowered nervous tone.

Treatment. With reference to treatment a point or two only can be mentioned. In most of the affections discussed some form of fixation is demanded for the relief of pain and it is necessary for the physician not only to be able to estimate the degree required but also to know the amount afforded by his various appliances. It is easy to fix a wrist or an ankle but the task of immobilizing the lower spine is a considerable one; no doubt this explains the insufficient treatment usually given affections of this region. When absolute rest of the lower spine or sacroiliac articulations is required it is best secured through the application of a plaster-of-Paris cast, which must extend from the axillæ to the knee or calf, combined with recumbency; a shorter cast or the assumption of the upright position affords partial fixation only. Abdominal binders, belts, and adhesive strapping are useful only in limiting motion.

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[3] Piersol: Human Anatomy, 1907, I., p. 338.

[4] Cotton, F. J.: Dislocations and Joint Fractures, 1910, p. 419.

[5] Lovett, R. W.: *Jour. A. M. A.*, 1914, LXII., p. 1615.

With reference to static backache a proper appreciation of the numerous factors at work in its causation explains the ultimate success of apparently widely different methods of treatment; when the cases are analyzed correctly, however, and the measures combined so as to meet all the factors present, recovery must necessarily be more rapid. To be especially emphasized here is the importance of muscle training as well as muscle building; we are too apt to think that if we increase the muscular development and the nerve tone the patient will naturally assume the correct figure and to forget that reëducation is an essential.

DISCUSSION.

Dr. D. P. Willard, Philadelphia: Dr. Silver has covered the subject of pain in the back and legs from the orthopedic standpoint, so clearly and concisely that little more need be added. As all good orthopedic surgeons should, he has embraced in orthopedic treatment, the skill of the internist and general practitioner. The importance of this coöperation between the allied specialties is the point which I most wish to emphasize.

Let me give you an example: In adults back pain is the manifestation of a general toxemia and this toxemia may come from varied sources; the teeth, the tonsils, the intestinal and genitourinary tracts are the most frequent. Until such foci of infection are investigated and cleared, orthopedic treatment, however carefully thought out or skillfully applied, has little chance of affecting a cure. On the other hand, purely medical treatment has even less chance of bringing comfort to the patient. The strained inflamed tissues around the vertebra demand the most skillful, careful treatment. Therefore, in the treatment of this group, we may need the skill of many and varied specialists.

Again in another large and most important group of cases, pain in the back is due to the strain put upon its ligaments by improper posture. The spine is the upper portion of the flexible weight-bearing portion of the body. The strain thrown on the back may be due to some fault in itself or in many cases to static disturbances in the lower extremities. It is obvious that any change in the lower part of the weight-bearing column must cause a corresponding change in the position and curves of the upper part. Especially is this true in children in whom the bones and ligaments yield more readily to change in position.

It is to the general practitioner that the orthopedist must look for aid in these conditions. It is seldom that these cases are seen early by the specialist. They come first to their own physician, complaining, perhaps, of a tired feeling in the lower back. On examination, there seems to be nothing essentially wrong, except, perhaps, more hollowing in the lumbar region than is normal. And when this patient returns later and says that the pain is worse in spite of treatment, the physician remembers the back may be only a signal station for other portions of the body and, on further examination, he finds that this child has a moderate case of flat-foot or knock-knee or, perhaps, a shortening of one leg, and that simple measures tending to correct these deformities will remove the pain signal in the back. But if such simple measures are not taken and the diagnosis not made in the early stages, and if the back condition is allowed to progress, there appears a permanent back malformation that will take months of patient and persistent effort on the part of both specialist and patient to overcome.

At the University Hospital in Philadelphia, we have been much interested in the close relationship between the various portions of the weight-bearing apparatus of the body, and in the children that come to our dispensaries complaining of some static disturbance we have carefully examined not only the portion which was giving symptoms but also the entire supporting column and we have been struck by these facts: In a very large proportion of the cases a defect in one portion of this column will cause a corresponding defect in another; often the secondary defect gives the symptoms for which the patient comes; and, having corrected the primary deformity, the secondary one will take care of itself.

In these cases of back pain it is essential to remember that we are dealing not with a purely local condition but with a portion of a complex machine every section of which may affect the part which we have under special consideration, and it is our duty not only to relieve a symptom but to put the whole body in such order that the symptom shall not recur.

FOR SPASMODIC DYSMENORRHEA.

℞ Amylis Nitritis, fl3 i.

Sig. Inhale 5 drops from a handkerchief as needed for severe pain.

TRAUMATIC RUPTURE OF THE INTESTINES.

BY WALTER LATHROP, M.D.,
State Hospital, Hazleton.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

Surgery, made necessary by traumatism, finds no field of greater importance, where early diagnosis and prompt interference mean so much for success, than in severe contusion of the abdomen, resulting in injury to the underlying viscera.

The cause of the injury is usually a blow, kick, fall, or direct squeeze, involving the abdominal wall. The viscera injured, are the spleen, kidney, liver, bladder, and small intestine and mesentery. Any one who has had a fair hospital experience will readily agree that it is often difficult to decide early whether a case of abdominal injury is of serious import or not, and whether rupture of intestine or mesentery has taken place. When we have a wound present, the course to pursue is very clear. But with no evidence of external injury we must be guided by the history and the signs and symptoms shown by the patient.

LeConte has well said that "it becomes necessary to make a most careful examination of both the subjective and the objective symptoms presented by the patient, to separate the trivial from the important points, and with our best judgment to sum up the evidence for or against operative procedure."

We should determine accurately the nature of the injury. If we have a force diffused over the abdomen, as by a wagon wheel or a log passing across it, we would expect a rupture of the bowel at some fixed point, such as the duodenojejunal, or ileocecal junction. Where the injury is from a blow or kick, the rupture would most likely be directly beneath the point of injury; usually the whole wall is involved, but in some instances only the outer coat is injured, and where the mesentery is involved we may have gangrene follow in the portion of bowel supplied by the vessels; this condition of course would occur only in cases not recognized and operated upon early.

The lesion or rupture of the intestine, as shown by various statistics, is most frequent in the ileum; next the jejunum, and then duodenum, and large intestine. My own cases have shown but one tear in the bowel, and in the series of eighty-five cases collected by Gage, only nine had more than one rupture. "Injury to the mesentery is found in about ten per cent. of cases."

Trauma, sufficient to cause these lesions, will necessarily carry with it danger of no small significance and independent of the intestinal injury itself, and in no branch of surgery is prompt action more urgently called for than in this condition. The abdomen below the umbilicus has been well named the "dangerous area."

The advantages of early diagnosis of intestinal injury can not be made too emphatic; each hour lost means a lessened chance for recovery; we well know that the upper portion of the intestine contains fewer virulent bacteria than that lower down, and the escape of the bowel content means more violent and rapid peritonitis, the lower down the injury. The symptoms of intestinal rupture may at first be misleading, and the injury may be regarded as trivial, but, given a history of direct violence to the abdomen, the man of experience will look very soon for danger signals. There may, or may not be signs of shock present early in the case, there surely will be later on. A severe bruising of the abdomen can produce shock out of all proportion to the injury, but, given a case with the history of direct injury at some given point, by a blow, kick, or crushing force, and we usually have a train of symptoms, something like the following: A rapid pulse, small and thready, increasing steadily each hour, with rapid respiration; an early rise and then a fall of temperature; frequently vomiting, which is usually of much significance, for it is a danger signal not to be disregarded. Constant nausea and vomiting is one of the most prominent symptoms of ruptured intestine.

Abdominal tenderness is usually present, though the rigid muscles show that nature is applying her splints to ease the suffering caused by the beginning peritonitis. This rigidity of the muscles is one of the most pronounced symptoms of rupture that I know of, being far greater than that found in appendicitis, or localized peritonitis of other organs, with the possible exception of a ruptured duodenal or gastric ulcer. Opiates do not relax the muscles, save when given in doses so large as to be dangerous, and to mask the needed symptoms. It is characteristic that the rigidity increases with each hour following the injury, and it is this constant, unvarying, progressive rigidity that is so diagnostic. Should distention of the abdomen occur at all rapidly it would indicate a condition of grave danger, as the usual course is one of slow progress. As a rule the facial expression shows great anxiety; the skin is moist, and the face pale.

LeConte has well said that the face shows, as a rule, one of the most positive signs of serious abdominal injury; to quote him: "The abdominal facies consists of a peculiar drawing of the lines, and deepening of the furrows of the face, which give an anxious, careworn, and painful expression to the countenance, while the eyes are questioning and anxious and search the faces of the people about. I can not recall ever having noted it as present in a case which failed to show a serious lesion."

In my opinion if a man has sustained an injury to his abdomen that gives the symptoms I have mentioned, even in a lesser degree, especially if there is vomiting repeated at short intervals, there is imperative need for an exploratory operation. There may be in some instances a delay in the appearance of serious symptoms, owing to the fact that the mesentery has been injured, and the blood supply cut off from the bowel, which gradually sloughs, and ushers in the symptoms of perforation already mentioned, some forty-eight to sixty hours after injury.

In regard to the operation, my own practice is to operate as early as possible after a definite history of direct violence, followed by shock, which in turn is succeeded by vomiting, and an increasing pulse rate, with LeConte's facial picture. The work should be done as rapidly as is consistent with safety, and all preparations should be made to meet any condition that may be found after opening the abdomen. A median incision is usually the one of choice, as it admits of a general exploration of the intestines and other viscera. On opening the peritoneal cavity there will be an escape of fluid, bloody, fecal, or one which is thick, and foul smelling. This is of course only when there is a rupture or perforation of the gut. A little bleeding, or none, gives one a chance to look over the intestine in a careful manner, but if there be hemorrhage then a search for its source should be made as rapidly as possible, and the rent or bleeding point in the mesentery, or bowel, closed.

Any intestine outside the abdominal cavity should be well protected by hot towels, and replaced as soon as possible. The search for the damaged spot, or rupture, is made much easier if we remember that after six hours from the time of injury lymph is deposited very freely in the vicinity of the perforation, and noting this and seeking the trouble near-by will shorten the time very materially. The closing of the rupture or tear is best done in accord with the surgeon's own methods, or as indicated by the condition found; a straight tear can be closed by a double layer of sutures, including, in one, all the coats. Should the bowel be ruptured, that is an irregular, jagged tear be present, then excision of a portion is best done, leaving the mesentery uninjured.

It should be remembered that a small portion of mesentery may supply a considerable area of bowel and, where it is injured, the bowel should be resected as otherwise there would be sloughing of the gut in a very short time. After the repair of damaged viscera has been made, we should thoroughly cleanse the abdominal cavity by careful sponging, and not by needless flushing, as was done in former days. Drainage is essential and should be used in all cases where rupture has taken place. A large rubber tube, carried to the seat of injury and supplemented by a Mikulicz' drain, is usually sufficient, and one or both may be removed in thirty-six to forty-eight hours.

I have never seen a case of rupture of the colon, but the general symptoms are similar to those of the small bowel, but there is one sign given which is characteristic of injury to those portions of bowel not covered by peritoneum, and that is emphysema, showing in the right or left flank. As regards the prognosis in these conditions, we may safely say that in all cases of true rupture of the intestines the patients will die unless operated upon, and, further, that the per cent. of recovery depends chiefly on the time of operation. Cases operated upon after twelve or fourteen hours have less chance by far than those done during the first six to eight hours after injury. As an example of early and late operation, I will cite two cases from a considerable number that have come under my observation.

Case 1. F. W., aged thirty-six, blacksmith, while at work, was kicked in the left side of the abdomen near the umbilicus, by a vicious horse. He was removed to his home and his physician summoned, who finding him in profound shock and suffering great pain, advised his removal to the hospital, which was done some eight hours after the injury. Examination at the hospital showed marked rigidity, rapid weak pulse, and great apprehension of death. He was operated upon at once, and on opening the abdomen a large quantity of foul smelling fluid escaped. A rapid search revealed a large rent in the jejunum, with little or no hemorrhage. The opening was closed as quickly as possible, the abdominal cavity carefully sponged, drainage provided, the patient put to bed, and hypodermoclysis started at once. He made an uninterrupted recovery.

Case 2. J. D., aged twenty-one, pugilist, while engaged in a boxing contest was struck, by his opponent's fist, on the left side of his abdomen; he fell to the floor and was carried to a side room where he was in great agony. He was badly shocked, was cold and clammy, with rapid thready pulse, and intense rigidity of abdomen. He was brought to the hospital, and after careful examination an operation was advised. This he positively refused, and said he had been "knocked out before," and would be all right soon. Within a few hours after admission he began to vomit; this became almost constant and his suffering increased accordingly, so that, after eighteen hours had passed, he begged to be given a chance by operation. This was done, and we found a large rupture of the jejunum, with general soiling of the peritoneal cavity and a large quantity of fecal matter. The operation was rapidly performed and he was given all possible stimulation, but in spite of everything we could do he succumbed in a few hours. Had he consented to early interference, I feel sure his life could have been saved.

I might mention another case, where the bladder was injured; another where the liver was involved; but they, and others, would only emphasize the plea for early exploratory operation in cases of suspected rupture or injury of the intestine, or other abdominal viscera, due to the effects of direct violence, and presenting the symptoms already mentioned.

In regard to the postoperative treatment, enteroclysis by the Murphy method is valuable; very little should be given by mouth aside from sips of water, or ice, for twenty-four hours. Morphin may be used if indicated and nourishment given gradually, as determined by the pulse and temperature. Vomiting if at all severe, will yield to the stomach tube.

DISCUSSION.

Dr. H. E. McGuire, Pittsburgh: I believe that when we are dealing with an injury of this kind that it is almost criminal to wait until we get certain definite symptoms. A rupture of the bowel is caused by sudden force applied to the abdominal wall, especially where the individual does not expect an injury and does not have time to protect the abdominal contents by muscular rigidity. It is true some cases receive a rupture when such protection would be of no avail, as in cases where some heavy object falls upon the abdomen; then again we have patients come in with slight traumatism of the abdomen which produces a rupture where we are satisfied that had the patient known he was about to receive an injury that the muscular action of the abdomen would have saved him.

The most important thing to an invalid who is suffering from a ruptured bowel is the diagnosis, and that must be made before peritonitis sets in if you do not wish to have a mortality such as you read about in some of the published papers and textbooks. What I wish to emphasize is that you must not place too much importance on any one symptom for the diagnosis. The symptoms of the ruptured bowel are anywhere from a slight rigidity of the abdominal muscles, the patient able to walk into the hospital, to one of most profound shock.

Personally, in dealing with a case where I think there is a rupture of the bowel, I place a great deal of importance upon the history of the accident. When a man is brought to me with a history of severe traumatism of the abdomen with slight rigidity in the abdominal muscles and the man's temperature continues to rise after a few hours, even though there are no other signs of abdominal trouble, I immediately open the abdomen. In the past three years I have operated upon ten cases and so far have opened but one abdomen in which I did not find a ruptured mesentery or ruptured bowel, and in that case there was a hemorrhage into the peritoneum which produced about the same symptoms as that of rupture. If by chance we open an abdomen and do not find a rupture, we do our patient practically no harm, and if a rupture is present, we save the patient's life.

The point I wish to bring out is the fact that if we wait until we get the signs and symptoms of perforation as are given in a great many of the textbooks, we can not expect anything other than a mortality from fifty to ninety per cent. I have not had one patient develop peritonitis after operation, although I have had patients that were suffering from peritonitis when brought to the hospital, due to the fact that they were not brought in until symptoms of peritonitis developed. I wish to lay stress upon the history of the accident. I have a standing rule at the hospital that, when a patient is brought in suffering from any abdominal trouble, no matter how slight, the man is put to bed and watched for twenty-four hours, and if any untoward symptoms develop, I am notified at once. I find that this is necessary, as in some abdominal cases the patients show no symptoms whatever when they are first admitted to the hospital. I may state that many of those patients would have developed peritonitis and died, unless prompt surgical treatment had been instituted.

CONSTIPATION FROM THE STANDPOINT OF A PROCTOLOGIST.

BY COLLIER F. MARTIN, M.D.,
Philadelphia.

(Read before the North Branch of the Philadelphia County Medical Society, November 23, 1914.)

Constipation, or obstipatio alvi, has been aptly defined as a condition marked by delayed, infrequent, insufficient or irregular fecal evacuations. While it should always be considered as a symptom of some abnormality of anatomy, physiology or pathology, such is not the conception held by the laity. When consulted, we are asked to cure the constipation, not the condition producing it.

Constipation therefore becomes an entity or condition affecting, as it does, the relation of man's habits to his surroundings. Retention of the fecal current, by reason of the failure to throw off effete and poisonous products of the body, as well as the reabsorption of these toxic substances into the blood-stream, soon causes such changes in metabolism as to produce a distinct clinical picture.

From a proctologic standpoint it would seem that we are concerned only with that class of cases, in which the constipation is due to local, anorectal conditions. Usually so many factors enter into the production of this symptom complex, that the mere recognition of a local lesion, rarely will explain matters, and the correction of local pathology may not result in a cure. If a patient has a fissure, hemorrhoids, or any acute perianal lesion associated with sphincter-spasm, we might be justified in considering them a direct cause of the constipation. Careful study of these cases may prove that the anorectal lesions play a very unimportant part in producing this symptom.

Normally, one of the human race excretes about six ounces of feces in twenty-four hours. There may be wide variations in both the amount and frequency of the stool. The amount varies with the age, the body weight, the amount and quality of food ingested, and with the amount of physical work performed by the animal, for it must be remembered that part of the excreta is composed of ash and waste material from the body itself, as well as undigested detritus. Cases have been reported in which feces were retained for long periods of time without causing any deleterious effect upon the health. I remember a patient of seventy-three years of age, who told me that since the age of fourteen years he rarely had a stool oftener than once in twenty-one days, and once had gone as long as fifty-two days without a passage. During all of these years he had led a very active life and always had a good appetite. One case is reported[1] in which the individual had only one movement in fourteen years, and yet had comparatively good health. Cases of this type must be regarded in the nature of either physiological perversions or else come under the heading of Hirschsprung's Disease (idiopathic dilatation of the colon, or megalocolon).

Also we have other terms to denote forms of constipation. Thus obstipation (meaning intractable constipation) is used in a specific sense when referring to disturbances due to mechanical obstruction, as in strictures, tumors, foreign bodies, angulation of the gut, and particularly to obstructions due to hypertrophy or malposition of Houston's valves. Fecal impaction, or coprostasis, refers to gradual or rapid accumulation in the large bowel, accompanied either by a condition of constipation, or an irritative diarrhea. Right here it seems appropriate to point out the fact that diarrhea is only too frequently a symptom of impaction, partial bowel obstruction, intussusception, or of benign or malignant stricture, and that many cases of diarrhea are due to intestinal stasis, and should be treated by the high injection, massage or by the persistent use of laxatives. The term dyschesia has been used to describe a condition associated with painful or difficult evacuation, as in cases of prolapse of the ovary. It is also used to indicate inefficient or incomplete attempts at defecation, or a condition of retention, with overflow.

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[1] Records of Phila. Med. Museum, 1805, Vol. I., p. 305.

We recognize both acute and chronic forms of constipation, the latter being by far the most usual. Acute retention may be due to mechanical obstruction or to inhibition of function, as noted in acute inflammation, such as typhoid and scarlet fever, peritonitis, or to toxins paralyzing the intestinal nervous mechanism. Certain conditions of the nervous system, such as acute mania, meningitis, hysteria and apoplexy, may be associated with sudden suspension of function, both as to visceromotor and viscerosecretory action. In addition we must recognize the acute obstructions due to accident, inflammation or misplacements, as intussusception, volvulus, strangulation, adhesions and angulations due to visceroptosis.

Sudden changes in diet, habits or environment often result in a condition of constipation. Many men take a laxative on Saturday night because they know that a movement will not occur on Sunday. This is caused by a breaking of the continuity of their regular daily program pursued through the other six days. In the same way when we go on a pleasure trip, the absence of our regular surroundings, new places, a strange diet, inaccessible or unduly public toilet facilities may tend to make us miss our regular time for evacuation. A case is reported of a man, who, if for any reason he was deprived of his morning cigar, was unable to have a stool until the day following, when the smoking of a cigar would excite the defecation reflex. In this case the stimulation of a cigar was necessary, but was effective only when smoked in the morning.

Gant says that, in children, the relatively greater length of the intestine favors angulation, invagination and volvulus; while the undeveloped state of the musculature causes a lessened expulsive power of the bowel. Carelessness of parents as to caring for the regular performance of the excretory functions, and to dense ignorance in the selection, or rather nonselection, of diet often predisposes to an acute suspension of function. It is also probable that the nervous mechanism concerned in the defecation reflex may not be sufficiently developed.

Do not forget that, in the newborn, constipation may be due to a partial or complete imperforate anus, and the attending physician will do well to introduce a finger into the anal canal of every newborn infant. It is better to be covered with meconium than with chagrin.

The causes of chronic constipation are so varied that only a mere mention of them can be made. The exercise of the excretory functions, as far as the human race is concerned, is governed largely by the necessities consequent to civilized life. As the act of defecation can be voluntarily controlled, opportunity and convenience often designate the time at which it is performed. Under ordinary circumstances, in the lower animals, defecation takes place automatically, periodically and naturally.

Individuals of the female sex are apparently the greatest sufferers from chronic constipation, due to lack of exercise, pelvic congestions, pregnancy, injuries to the pelvic floor, and particularly to a sense of false modesty. Ordinarily a tendency toward periodicity and automaticity for evacuation is marked even in the human race. Also we are the creatures of habit and education. According to Hertz, the taking of food in the morning is the most powerful of all stimuli to the motor activity of the colon in man. He also says that "normally, the desire is felt only after breakfast, partly owing to habit, and the simultaneous occurrence of a number of other stimuli; but partly because the stimulus of food, entering a completely empty stomach after a fast of twelve hours, is greater than that produced by food taken in the middle of the day, or in the evening, at a comparatively short interval after a previous meal."

The defecation reflex shows itself at its maximum when feces descend into the rectal ampulla and press upon the anal papillæ and the dentate border. It has been pointed out that irritation at one point in the bowel is followed by contraction of the gut above that point, and the relaxation below.[2] This starts a wave of alternate contraction and relaxation which constitutes the act of defecation. In this way the whole of the large bowel below the splenic flexure is emptied. Voluntary neglect of these imperative calls of nature results in a dulling of the muscle sense, and a relaxation of the bowel walls, and the desire for stool disappears, only to return when a further accumulation of feces again starts the defecation reflex. It has been well said that the three main causes of constipation are "ignorance, laziness and neglect," to which might be added "false modesty."

Tuttle aptly says that water closets should be placed where neither weather, darkness nor publicity interferes.

Old age predisposes to constipation, probably due to atrophy of the intestinal musculature, and to the blunting of sensation causing a deterioration in the defecation reflex.

The effect of diet upon the functions opens up such a wide field for consideration that no attempt will be made to discuss the matter here.

Mental processes exercise a wide influence upon the excretory mechanism; thus, excitement, fright or anger, either may inhibit or stimulate peristalsis or secretion.

Taking up the anorectal causes for constipation we may, for convenience, divide them into four great classes; those cases caused by inflammatory processes, mechanical obstructions, motor insufficiency, or derangements of the nervous mechanism concerned in defecation.

It might be well at this point to generalize and make the rather dogmatic statement that stimuli applied to the bowel above the anorectal line are prone to be followed by an increase in the number of bowel movements, and in secretion; while at or below the anorectal line irritation is followed by reflex muscular contraction and voluntary inhibition, and tend to produce a condition of constipation.

The anal canal, or that portion of the bowel below the anorectal line, is richly supplied with spinal nerves, carrying impulses of special sensation, such as pain, touch, heat and cold, and is extremely responsive to all forms of stimuli. Excessive irritation in this area is followed by spasmodic contraction of the striated external sphincter, assisted by a reflex closure of the involuntary internal sphincter. This muscular contraction results in the retention of feces, as the muscles concerned in the mechanism of defecation are unable to overcome the obstruction, a passage being attained only by calling into play the accessory muscles of defecation. Acute inflammatory processes involving the sphincter area are the most frequent causes of this form of constipation. In this class a few of the diseases are abscess, fistula, hemorrhoids, acute rectitis, cryptitis and anal fissure. Also acute inflammations involving the urogenital tract may be etiologic factors in producing sphincter spasm.

The constipation of fissure, if not of the chronic type, usually is produced by the inhibitory effect of fear, the patient voluntarily delaying the act of defecation, as long as possible, in order to escape the hours of torture they have such good reason to expect. This form of constipation, due to sphincter spasm producing a disproportion between the expulsive power of the rectal musculature and the controlling effect of the contracted anal outlet, may be relieved by a divulsion of the sphincters.

In all of the painful anorectal conditions, the pain, except where due to suppuration or acute inflammation, is in direct proportion to the amount of sphincter spasm or sphincterismus. A divulsion will put a stop to the spasm, lessen the pain and reëstablish the normal function of defecation.

Among the conditions producing the second type of constipation, that due to mechanical obstruction, may be mentioned tumors either within or around the rectum, benign or malignant strictures, hypertrophies or malpositions of the valves of Houston, congenital obstructions or malformations, prolapsus and intussusception of the rectum, diverticuli and foreign bodies, and coproliths.

Constipation due to motor insufficiency in the rectum is not uncommon. The most usual form is that produced by the muscular atrophy of the aged. Also chronic wasting diseases and conditions associated with muscular weakness and inertia, such as chlorosis, are common causes. Constipation in children, when due to an undeveloped musculature may be put in this class. Weakness of the accessory muscles of defecation, such as diastasis of the abdominal muscles, the relaxation due to the muscular stretching of pregnancy or of large abdominal tumors, or to abdominal operations frequently results in the establishment of a condition of chronic constipation.

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[2] Bayliss and Starling, 1899.

Constipation frequently is an annoying condition associated with disease of the central nervous system. The act of defecation, so far as the bowel above the anorectal line is concerned, is governed entirely by the sympathetic or autonomic system of nerves. Below this anorectal line a direct spinal innervation becomes operative. Apparently this spinal innervation to the external sphincter, levator ani muscles and anal tegument, serves a purely protective function, inasmuch as it provides the individual with timely warning of an impending evacuation, allowing of the exercise of voluntary and involuntary inhibitory muscular contraction, until such time as it is convenient or appropriate to have a stool.

Muscle sense and pressure sense are practically the only visceral sensory phenomena felt within the rectum and seem to be necessary for purposes of causing muscular contraction of the bowel walls, thus completing the defecation reflex. Spinal disease, producing either a visceromotor or a viscerosecretory paralysis, or a viscerosensory disturbance, would necessarily interfere with the development of a normal defecation reflex. In tabes dorsalis and in paresis we find not only a sensory paralysis of the sphincters, but some loss of muscle sense in the rectum itself. There is often a complete loss of the sphincter reflex, associated with a more or less patulous condition of the anal orifice. As the act of defecation, when uninfluenced by voluntary inhibition is purely a reflex and automatic process, we frequently note a peculiar condition which consists in a form of constipation, associated with incontinence. Because of the lessened sensibility of the bowel walls, the pelvic colon and rectum require considerable distention with feces before sufficient efferent impulses are generated to cause afferent motor contraction. When this contraction does occur, the sensory paralysis in the anal canal prevents the patient from receiving due and timely warning, so that the act of defecation proceeds automatically and unconsciously. Often we say that the patient has lost all control of his bowels. This is only partially true, for it will be found that if the patient becomes aware of an impending accident, by voluntarily contracting the glutei muscles and the external sphincter, he can control the act long enough to prevent unpleasant consequences. This is not true in patients having a motor paralysis. These patients may have a movement only by the repeated use of large doses of laxatives and by the use of enemas, but when expulsion does occur, although acutely conscious of the onrushing event, the patient has absolutely no power of voluntary control. In transverse lesions of the cord and in cerebral lesions, the defecation reflex and the sphincter reflex may be intact, the patient is incontinent because no impulses reach his brain to notify him that the time for defecation is at hand. Even these patients may be constipated, but because the expulsion of feces occurs automatically and periodically we are led to believe constipation does not exist.

It should be borne in mind that constipation has nothing to do with either continence or incontinence the latter simply referring to the condition of the sphincters guarding the outlet of the bowel, while constipation refers more particularly to the time required for food and its residue to pass through the alimentary canal. With this view in mind the definition of Hertz that "constipation may therefore be defined as a condition in which none of the residue of a meal, taken eight hours after defecation, is excreted within forty hours" seems particularly appropriate.

Before closing this paper I wish to pay my respects a little more specifically to a very common and pernicious form of constipation. This is called "habit constipation." It has been observed that when the rectum has become sufficiently distended with feces to cause pressure on the muscular coats, and upon the spinosensory innervation situated in the floor of the rectal ampulla, the individual feels an imperative desire to defecate. By exercising the power of voluntary inhibition, the muscles become accustomed to the stimulus and the desire wears off, only to reappear when an added amount of fæces collects in the rectum to again start the defecation reflex. Often no further desire is felt until at a corresponding time the following day. This is probably due to the fact that, although normally the act of defecation tends to take place automatically, education and habit seem to have added an extra factor of periodicity to the exercise of this function. The influence of education and habit is well illustrated by the story of the old sea-captain, who sailed a little schooner from New York to Norfolk. While on shore his bowels were evacuated daily, but as soon as he stepped on board his little schooner, to use his own words he "fastened down his hatches" and did not have another movement until he reached land. It would be interesting to know what would happen if this worthy sailor should try the same method during a sailing voyage across the ocean.

This absolute disregard to the calls of nature soon destroys the beautiful automatic mechanism of defecation, and in this manner many of the worst cases of constipation originate. Rigid attention to the calls of nature and a determined effort at developing a regular habit will break up many a case of constipation without the use of any drugs.

CONSTIPATION AS A FACTOR IN NERVOUS AND ALLIED DISORDERS.

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(Read before the North Branch of the Philadelphia County Medical Society, November 23, 1914.)

Since Bouchard, in 1887, gave the impetus which has led to the study of the subject of autointoxication and its relation to disorders of the gastrointestinal canal, much has been said and written upon the subject. Like all newer points in pathology, the matter has been overdone, so that now it has strong opponents and supporters of the theory. Clinicians, in some instances, seem to stake all upon the "indican reaction," and assume that the presence of a plus reaction is sufficient for diagnosis and as a basis for treatment, and loosely speak of indicanuria as if it were the same thing as autointoxication. In direct opposition to this we find in the last edition of Adami's textbook the statement, "So far as we can see there is not the slightest evidence that indol is produced from the tissue cells or even the digestive juices. Indol is a product of protein disintegration formed by the proteolytic action of the colon bacillus, and is absorbed together with cresol and ethereal sulphates and discharged in the urine as indican."[1] That there are poisonous products which accumulate as the result of defective function of the gastrointestinal apparatus there are very few reasons for a basis of doubt. These defects, through insufficient muscular activity, permit the absorption of those products in excess, which means a quantity greater than can be handled by the eliminative viscera in their convertive action. Sir W. Arbuthnot Lane states that "in consequence there exist in the circulation materials which produce degenerative changes in every single tissue of the body and lower its resistive power to invasion by deleterious organisms."[2]

This phase of the subject, as most of us well know, has been thoroughly studied, following Lane's investigations upon the subject of intestinal stasis and its consequences. Before entering upon this, the principal theme in this discussion, I shall briefly dispose of the symptom constipation as a factor in organic nervous affections.

In organic diseases of the nervous system with localized lesions the problem is quite different. Constipation as a symptom presents its greatest value from the standpoint of diagnosis and prognosis. For example, paralytic inactivity of the peristaltic movement is very common in association with lesions in the lumbar swelling of the spinal cord wherein is seated the center which controls the movements of the intestinal musculature. This paralytic condition occurs as the result of the direct effect of interference with the function

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[1] Adami and McCrae: Textbook of Pathology.

[2] Lane, Sir W. Arbuthnot: Chronic Intestinal Stasis, *Brit. Med. Jour.*, Nov. 1, 1913.

of either the motor cells, or pathways, or both, from center to muscle. Again, in locomotor ataxia, the disease process begins in the posterior roots and ganglia carrying impulses to the lumbar segments of the cord. The sensory limb of the reflex arc is defective in its ability to transmit the effects of stimuli; the presence of the fecal mass is therefore insufficient to induce peristalsis, and rectal constipation exists. Constipation with loss of the anal reflex, which is normally present when an attempt is made to introduce a finger into the rectum, may be one of the earilest signs of locomotor ataxia.

Obstinate constipation associated with attacks of nausea, with or without pain in the region of the epigastrium, in the absence of other assignable causes should lead the clinician to look for evidences of spinal-cord disease.

Gastroenterostomies and other abdominal operations have been performed for the relief of gastrointestinal symptoms overlooking the fact that the pain and vomiting were the result of posterior nerve root involvement, *tabes dorsalis*. Such a case occurred in my own practice. The only symptoms presented at first were constipation and cyclic vomiting. The physical signs, with the exception of slight inequality of the pupils, with a tardiness of the light reflex in one eye, were wanting for a period of six years. The patellar reflexes were preserved, except for brief periods following the vomiting attacks; this loss, at the time, was attributed to the state of general exhaustion which followed each attack. Three abdominal operations were done without relief and the case progressed into one of unmistakable tabes.

From the standpoint of treatment we are unfortunately forced to await the perfection of an intrathecal or some other method of staying the disease process before degeneration of the neuronic elements has taken place. In the meanwhile, the constipation must be combated as a symptom.

The next, and still more serious organic nervous disease, in which troublesome atonic constipation may be met is that of gross lesions of the cerebral masses. The symptom is shown objectively in the so-called paralytic distention of the intestines in association with grave cerebral lesions such as large hemorrhages or rapid softening following thrombosis of a large vessel, for example, one of the large branches of the midcerebral artery. The value of the symptom in question is greatest from the standpoint of prognosis. The patient suffers profoundly from shock, and doubtless paralytic distention occurs as the result of the affect upon the sympathetic. Such patients rarely recover from the shock of the cerebral lesion.

The second group of nervous disorders in which constipation may be a factor is a large one, and is of especial interest to the student of medicine in general. Every patient presenting symptoms of nervous or mental disorder, in addition to the matter of the management of the case from the viewpoint of the purely nervous symptoms, becomes a case to be studied from the broadest medical standpoint. Brief mention only of the symptoms referable to the nervous system can be made here, and the consideration of the pathogenesis and importance of the symptoms will be considered collectively, with emphasis upon certain mental states. The nervous manifestations may be enumerated under the terms, headache, insomnia, restlessness, fatigue, mental exhaustion, mental irritability, migrainous attacks, states of mental confusion, mental depression and exaltation.

This brings us to the further consideration of the recent discussions in reference to intestinal stasis as a causative factor of disease states. Lane enumerates the symptoms that are directly the result of the autointoxication of chronic intestinal stasis: Loss of fat, wasting of voluntary and involuntary muscles; degenerative changes in the skin, with change in color, texture, and with pigmentation; a bloodless state of the extremities; dulling of common sensation; cyanosis of extremities; mental apathy, stupidity, or misery, which may be exaggerated into a state of melancholia, with a marked liability to suicide.

Considerable has been said and done (surgically) in the past year or two concerning the treatment of the effects of chronic constipation due to knots, loops, and contractions of the intestine which so alters the lumen of the gut as to interfere with peristalsis in one or more of its parts and arresting the passage of its contents. One of the earliest writings on the subject of the pathology of mental disorders by Schroeder Van der Kolk, which appeared in 1864, and was based upon a study of the postmortem findings in the abdominal viscera, seems to refer to the same condition which has been discussed recently with so much interest. Kolk says, "Morbid changes are most numerously presented by the colon, especially in melancholy, together with sluggish evacuation, and so-called obstructions are usually with this symptom. The left colon is almost always the suffering part; here are present knots and narrowings which we can not at all, or only with difficulty, obliterate by inflation. The position of these structures is changeable; we find them below the sigmoid flexure, at its junction with the rectum, where the sigmoid fold is usually widened, elongated, and distended by gas. . . . The mucous coat has generally a sound appearance; but frequently at the seat of the stricture it is thickened and red. . . . . Generally the patients so affected have suffered, some earlier, some later, from constipation. . . . The feces are detained by the strictures; in consequence of this distention gas is developed and the transverse colon is distended. . . . The fecal mass, which through long detention becomes hardened, operates irritatingly on the stricture, and entirely stops the passage."[3] The condition here described is a terminal and extreme example of adhesions of the gut, but nevertheless it requires but a moment to recognize the fact that the description differs little from the anatomical changes described under the term "intestinal stasis." The writer has seen a few cases of mental disorder in which recovery from the mental symptoms promptly followed the unloading of a bowel which had been packed for a long period. Pediatrists have the opportunity to observe convulsive seizures as an accompaniment of similar conditions, especially in young children, promptly relieved after the removal of the offending material from the intestinal canal. The suggestion at once arises that an hypersensitive nervous system is operated upon by the accumulated toxic materials. In mental disorders of the adult, which seem to be dependent upon a functional intestinal stasis, the symptoms are such as point strongly to a toxic factor, and are characterized by states of confusion, with involvement of the sensorium as shown by the presence of hallucinations of vision, hearing and touch; or by the development of a stuporous state. The convalescent period in all such instances calls for attention to the digestive and eliminative functions.

The much larger group of cases of mental disorder with gastrointestinal affection includes many of those occurring in middle life or in the presenile period. These are apt to be of the depressed or melancholic type. It is a noteworthy fact, as Kolk told us fifty years ago, that in such cases constipation is a troublesome factor.

The secretory functions of the gastric and intestinal juices are largely dependent upon nervous influence. In fact when not brought about by the chemical action of stimulating substances (hormones) upon secreting cells, all secretory functions are regarded as reflexly excited.

Secretion of the saliva and gastric juices can be brought about by stimuli that are purely psychic. The thought (recollection) of substances which excite acid taste reactions and the sight of certain food materials will excite the secretion of saliva and gastric fluid. Shock, fright and worry will excite diarrhea through disturbance of the vasomotor apparatus and increased secretion of the intestinal fluids. Pawlow[4] has shown that psychical secretion, and also that produced by a sham meal, may be abolished by division of the vagi. It has also been shown by Grandauer[5] that the psychic influence upon the flow of gastric juice is as marked in human beings as in Pawlow's dogs.

Important as the nervous influence appears to be, the nervous stimulus to secretion is not regarded by physiologists as the only factor. It has been determined experimentally that the mucosa of the intestine secretes a substance which excites activity of the pancreatic secretion, the exciting substance named by Bayliss and Starling[6] "secretin," which they found to act independently of the nervous supply of that organ. The same investigators found also that acids, for example, gastric juice excites pancreatic secretion by nervous activity reflex in origin. Edekins[7] found in the pyloric mucosa an active substance, absent in the fundus mucosa, which when injected into the circulation is followed by secretion of the gastric juice. These data point to the conclusion that the products of the first gastric digestive processes act upon the pyloric mucosa (reflexly?), resulting in the production of a substance which is absorbed into the blood stream, and thence carried to the gastric glands, acting as a "gastric secretin" or "gastric harmone," which is a specific secretory excitant. It has been definitely shown that activity of important glandular structures and their secretions are stimulated, and possibly controlled by their nerve supply; this may be excited through purely psychic stimuli or by peripheral stimulation; also the same effect upon the glandular activity may be brought about by chemical activity of specific secretory stimulants—hormones.[8] The fact that secretion has been observed going on, presumably as the effect of hormones, in instances in which the nerve supply to the pancreas has been cut, does not show that normal glandular activity can continue indefinitely without the nervous influence. Still more difficult of demonstration would it be in the case of the gastric and other secretions.

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[3] Van der Kolk, Schroeder: Pathology and Therapeutics of Insanity. Translated by J. Workman, *Am. Jour. of Insanity*, Apr. and July, 1864.

[4] Pawlow: The Work of the Digestive Glands, Translated by Thompson.

[5] Grandauer, K.: *Deutsch. Archiv. f. klin. Med.*, CI., s. 302.

[6] Bayliss and Starling: *Jour. of Physiology*, 1902-03.

In the study of the physiopathology of the viscera in certain forms of mental disorder we find much that lends itself to interesting speculation from the standpoint of etiology and symptomatology, and a good deal that seems to correspond with the data of modern physiology.

Van der Kolk's observations, and those of more recent observers, agree closely in that digestive disorders, and especially constipation, are prominent symptoms in states of depression. Lane reverses the proposition in stating that mental depression is present as a symptom in intoxication due to intestinal stasis. We must not lose sight of the fact of the importance of the relation of cause and effect before drawing our conclusions.

The intestinal symptoms may be primarily of nervous origin and therefore an effect rather than the cause of the depression in instances in which organic strictures, bands, loops and kinks can be excluded.

In the melancholic states which are so common at and after middle life, the conspicuous symptom complex presented in the average patient is described under the term "depression." The term conveys more than the idea of depression of spirits; it means depression of the nervous functions in entirety, involving the whole of the nervous mechanism and its functions. Such patients exhibit the picture of nervous retardation, both mental and physical. The facial expression is dull as the result of motor insufficiency and muscular relaxation; the eyes are lusterless due to deficiency in the lacrymal and conjunctival secretions; the skin and hair are dry, the former wrinkled, sallow and commonly pigmented; the mouth is dry as the result of insufficient mucous and salivary secretion, so marked may this be that the patient has not enough saliva to moisten a bolus of food, making the act of taking food unpleasant, and food may be refused for this reason. Digestion is evidently impaired and epigastric and lower abdominal discomfort often complained of may form the basis of morbid ideas and beliefs in regard to the bodily state. A patient believes that his abdominal organs are gone; that the stomach has no outlet; that the body is solid and can not accommodate food. The bowels are obstinately constipated which may be the result of nervous inactivity, or, as is often the case, may exist because of the mental state directly or indirectly, and act in the establishment of a vicious circle, which intensifies the intestinal condition and in turn aggravates the mental state.

One of the most troublesome symptoms in melancholic states is insomnia. Secretory insufficiency already established may be intensified or prolonged by the administration of hypnotics, especially derivatives of opium and hyoscin. With the best of intentions we are thus locking in the circulation the very toxins which are producing the symptom we are trying to relieve.

Further, abstinence from food, which is of common occurrence in melancholics, results in fecal insufficiency which is an aid to, if not a cause of, intestinal stasis. Again, the mental state of the patient in depressed states is such as to lead to inattention to the reflex demand for bowel evacuation. This will bring about a constipated habit, if not already established. Furthermore the fact that the patient has difficulty in emptying the bowel may lead to false ideas in regard to his state; thus a patient believed that he would be doing wrong if he allowed his bowels to move, and, in spite of cathartics and severe pain, he would voluntarily restrain his evacuations. Delusive ideas may primarily lead to conditions favoring constipation, thus, a patient believed that he suffered from a disease which he could transmit to others, and that his excreta passing into the sewage system and into the rivers would be the means of spreading his disease to the entire populace. On this account he deliberately restrained the impulses to evacuation, and as a result constipation was self-induced. In dementia præcox, the psychosis of youth, one of the conspicuous symptoms is an involuntary opposition to all external impressions, which has the appearance of obstinacy. This is commonly exhibited in a resistance to the evacuation of both bladder and rectum.

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[7] Edekins: *Jour. of Physiology*, 1906.

[8] Vincent, Swale: Internal Secretion and the Ductless Glands, 1912.

The usual state of mental patients is such that they are unable to coöperate in methods of examination and treatment. In spite of the difficulties thus encountered, treatment can be carried out and the patients do get well of their mental symptoms. Modern diagnostic methods call for roentgenographic examination which involves a complicated technic and the help of the patient which of course is made impossible by reason of the nature of the conspicuous symptoms of the malady.

There seems to be sufficient evidence to warrant the assumption that intestinal stasis and the resulting toxic effect upon the nervous system may be a strongly exciting causal factor. In instances in which such a factor is not apparent, or no external cause can be found, we know that we have to deal with individuals who by reason of inherited defects are endowed with a peculiar preparedness of the nervous system marked by functional instability, which in such instances may be the principal etiological factor. In these individuals the external or physical causal factor is insignificant, and yet the physical symptoms already enumerated may be present, brought about by the vicious circle established as described.

In all cases rational medical methods must be employed to determine to which of these two classes our patient belongs. The nature of toxic materials, if present, must be determined and the best means at our command employed to eliminate those toxins, while every measure possible must be used to prevent the accumulation of those toxins. Like the secretory activity of the glands already mentioned, the urine is apt to be diminished in quantity and concentrated, containing an excess of urates, earthy phosphates, oxalates, indican in excess, with or without an increase in the acidity which may exist in an amount varying from forty per cent. to ninety-six per cent., all of which indicate serious disorder of metabolism, and which calls for attention.

The weakened state of the patient usually speaks for rest in bed. The initial therapeutic measure, usually applied upon general principles already mentioned, is a cleansing enema, given whether there have been bowel movements or not. Not infrequently there is present a pseudodiarrhea, the diarrhea of constipation, which is the result of the continued irritation of the rectal mucosa by masses of hardened feces. After the cleansing enema the return is allowed to stand awhile in the vessel to allow sedimentation to take place and the enema water poured off, after which the fecal matter is washed with clear water for examination. Commonly in a light colored stool which is dry and crumbling, there will be found a sedimentation of fine sandlike material which indicates that the operation is not yet completed. Subsequent washings usually bring a return of fecal matter which has been retained for days, in spite of cathartic movements, and frequently a number of rounded marble-like masses. In such bowel conditions strong cathartics are worse than useless for the reason that they do harm by their irritating action upon an already abused mucosa. Oily enemata are useful in such cases as supplements to the daily watery injections which later may be warm normal saline solution. It will require a week at least to get a lower bowel any where near a condition which is desired.

In patients who do not present this extreme condition, after the initial cleansing of the bowel, the customary course of calomel is given, followed by a saline cathartic, and in selected cases a suitable laxative which can be given in such doses that can be regulated so that the patient receives just the amount necessary to give one sufficient evacuation daily. The fluid extract of cascara is commonly employed because of its efficacy and the possibility of gradually reducing the dosage by a drop or minim scale of reduction.

The urinalysis usually furnishes the matter for guide to diet and medication. Intestinal antisepsis, alkaline diuresis is employed as called for by the indications. The vasomotor apparatus practically always demands attention. This may be depressed, and is apt to be so in excited patients; in the depressed cases however the blood pressure is elevated as a rule, due to the irritating effect of toxic materials upon the sympathetic. The heart muscle however is usually in need of moderate tonic stimulation; this is best accomplished with remedies not calculated to act upon the periphery; for example, tincture of nux vomica or strychnin is valuable.

When the patient begins to gain strength and the bowels have become more or less regulated, he is gotten out of bed and the medicinal laxative is replaced by paraffin oil, a dose that is found to be suited to the needs of the individual. Carefully graded exercises, according to the mental state of the patient, are often instituted, supplemented with massage. Very important as a sedative, as a stimulant to skin and kidneys, and as a reëducator of the vasomotor apparatus is hydrotherapy. This is carefully applied so as gradually to increase the demand for reaction only in proportion to the results obtained.

In dealing with symptoms which are prominently mental, the treatment of the psychic side of the patient is as important as the physical, but is less essential in the earlier management of the case than it is later. The patient must be placed under the best possible conditions as to environment; he must be impressed that he is regarded as a sick man in need of attention and help, instead of the unworthy person he thinks he is if he is a "depressive," and he must be constantly brought face to face with the idea that he is to get well.

CONSTIPATION IN WOMEN.

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(Read before the North Branch of the Philadelphia County Medical Society, November 23, 1914.)

You will readily recall that constipation, next to headache, is the single complaint most frequently made by your female patients. It may be said that the average individual, to be in health requires a daily stool. Exceptions do occur, some women habitually have a bowel movement only once in two days, or more, and enjoy good health. Riesman mentions the case of a girl who had her bowels moved only once a month, at her menstrual period; the girl's mother usually would go two weeks without an evacuation.

"In constipation, nutrition and metabolism are interferred with and serious circulatory disturbances arise from the choking of the intestinal tract; from the copremia caused by absorption of the poisonous retained products; and from the local stasis in the hemorrhoidal vessels, which may be continued up into the portal system and into the liver. It would be interesting and important to determine how far a habit of constipation may be responsible for the slow evolution of far graver diseases of the organs of the body cavity and of the brain."

Of the many causes of constipation in woman may be mentioned the following. A sedentary life; simple laziness; modesty, because a woman prefers to suffer rather than go to a closet publicly located; tight lacing, improper dress; the train of causes resulting from the violation of hygienic laws; defective innervation; sluggishness of bowel function; excessive acidity of the stomach; gastric atony; the eating of too nourishing food to the exclusion of other foods; chronic catarrhal enteritis; displacement and malformation of the intestines; intestinal tumors; chronic intussusception; strictures following dysentery, typhoid fever and tuberculosis; redundant sigmoid with a long mesosigmoid; lesions of the rectum; painful affections of the anus; the habitual uses of purgative medicines; the abuse of enemas and suppositories; weakness of the abdominal muscles; repeated pregnancies; compression of the intestine by the pregnant uterus; as a natural sequence in the puerperium; lacerations of the pelvic floor; compression of the intestines by tumors (uterine fibroids, ovarian cysts, etc.), exudates, or constricting peritoneal bands; uterine displacements; psychic influences; obstruction of the biliary passages and cancer of the head of the pancreas; obesity; and diseases of the heart, lungs, liver, and kidneys, especially when associated with passive congestion of the intestines.

A careful study should be made of each patient, first to establish the point that constipation exists, and secondly as to its etiology. Naturally the rational treatment of the disease consists in the removal of the cause. The factors to be considered are the general health of the patient, her train of symptoms, kind and amount of food taken, exercise, whether or not feces are present in the sigmoid or rectum, and if so in which part of these structures. The treatment of constipation often is a question requiring great judgment and patience, the latter especially on the part of the patient. Diet, exercise, and personal hygiene constitute the all-important triumvirate under this connection.

Much can be accomplished by educational means, impressing upon the woman the importance of going regularly to stool as nearly as possible at the same hour, whether the desire is felt or not, and remaining for a sufficient length of time. After a stool occurs a few minutes should be given to ascertain if a further amount of fecal matter will find its way into the rectum, which often happens. It is preferable not to allow this to remain in the rectum, for it will blunt the sensibility of the mucous membrane, and delay the cure. You will all recall how frequently in making a bimanual examination fecal matter is detected in the rectum. Water closets should be made comfortable, and privies should be sheltered and unexposed. These are important factors in the tenement houses, among the poor classes and in commercial and manufacturing districts. The relation which faulty closet accommodations bears to the diseases of women is very important. "Probably no single cause," writes a close observer, "has had so much influence in producing the peculiarly delicate condition for which women living in the country and in the small towns in America are notorious, as the discomfort, inconvenience, and frequent repulsiveness (and I may add, indecent exposure) of their closet accommodations." "Show me," said Goodell, "the nation that gives the most comfort, the most privacy, the most solicitation, to the evacuation of the body, and you show me, in refinement, in education, and in morality, the foremost people on the face of the earth."

Diet should receive careful attention. Cereals and green vegetables leave a large residue in the intestines, which excites peristalsis and offers a residual mass for expulsion. The addition of fruit will afford a laxative. An apple or two daily, or a glass of cold water taken upon arising, is efficacious in many instances.

Daily exercise, to be outlined in the most available form for the individual patient, is of inestimable value. As stated by Hale Powers, "It is not greatly to the discredit of physicians that chronic constipation is usually treated by medicine alone, or by medicine and diet, and rarely by medicine, diet and mechanical therapy. The physician is not wholly to blame. His experience has taught him that while nearly all patients will faithfully take medicine, and some will submit to a restricted diet, only the exceptional individual will or can faithfully take exercises. Want of time or facilities, and the aversion to muscular effort which grows on those of sedentary habits, are some of the reasons for this. To overcome a persistent aversion to exercise there is no other way save to interest the patient in sports. Golf and tennis are the sugar-coated pills, or the enticing elixirs of mechanical therapy. Specific exercises are its bitter tonics."

Massage is beneficial in some instances, and electricity has its advocates.

Of the medicinal treatment in general the number of drugs are legion. Preference should be given to cascara sagrada. This is the only drug which alone moves the bowels, and at the same time tends to render future passages more easy and regular. Cascara in combination with aloin, belladonna and strychnin to be taken at bedtime, will be found very efficacious. The doses of the ingredients should be so regulated as to avoid its acting too strongly the next morning. It would be preferable to combine aloin, belladonna and cascara with nux and iron, and give at least three times a day. The laxative should be diminished each time the prescription is renewed, until only the nux and iron remain.

It is needless to say that preparations containing aloes never should be administered to patients with any signs of hemorrhoids, for aloes even when given in moderate doses, acts almost entirely on the lower bowel, producing congestion of its mucosa.

Strong laxatives and cathartics tend to congest the abdominal and pelvic viscera, the very condition it is desirous to relieve, and therefore should be avoided.

The mineral waters must be borne in mind, especially Friedrichshall, Apenta, Hunyadi and Carlsbad salts.

The use of enemas is possibly the simplest and most expedient means of emptying the bowel and avoiding the internal administration of drugs. For this purpose one may use soap suds and water, or two to six ounces of warm sweet oil, the latter allowed to remain in the bowel over night. The Kussmal treatment, especially applicable when a dry, hard stool is present, has effected a cure in a fair percentage of cases. This procedure consists in slowly injecting into the bowel (the hips slightly elevated, and the oil being held about six inches above the buttocks), one pint of warm cotton seed oil, which the patient is instructed to retain until the next day. These injections are given just before lunch, daily for the first week, then two or three times a week for the next few weeks. The first treatment or two may be ejected within an hour, after that as a rule, no difficulty is experienced in its retention. Glycerin suppositories, also have their indications. One must bear in mind the possibility of loss of tone in the bowel, due to the distention by enemas, which may increase the constipation. In order to avoid this, when enemas are indicated, Knopf uses one or two ounces of glycerin, or about ten ounces of linseed oil alternately with the hot water injection.

When there is ptosis of the stomach or colon, or diastasis of the recti muscles, some form of abdominal support must be considered.

Amenorrhea in the young girl may not infrequently be the result of the anemia produced by constipation or coprostasis. As Reed states, "Many young girls are so loaded with fecal products, that their breath has the odor of a night cart."

Constipation may produce pelvic vericocele, with its accompanying train of symptoms, which may be ascribed entirely to the constipation.

When gastric, or gastrointestinal diseases are present, the appropriate treatment for these conditions of course would be indicated.

The concurrence of constipation and a rise of temperature and pulse rate, in the early days of the puerperium very frequently occurs, and the fact that it is often toxic, is shown by the headache and malaise which accompanies it. In some instances a temperature of 104° F. with a pulse rate of 120 have been observed. Treatment consists in free purgation.

Constipation in pregnancy is frequently observed, due partly to pressure and to deficient innervation of the muscular coat of the bowel. As a result of the constipation hemorrhoids may occur, and the accumulation of feces in the colon may predispose to abortion. Under these conditions cathartics are to be avoided, and laxatives administered.

Care must be exercised in the selection of drugs for administration to the nursing woman, as some pass off in the milk secretion and affect the child.

The question of the rôle played by a retrodisplaced uterus as an etiological factor in producing constipation is an interesting one. Lucy Waite says that there are some gynecological superstitions which are hard to overthrow. One is that retrodeviation of the uterus is a cause of constipation. It could not be proved either by dissection or examination. She had 500 cases analyzed, but could not trace constipation to posture of the uterus alone. If a retrodisplacement of the uterus does act as a causative factor, it must be in the exceptional cases where the body of the uterus falls against the rectum, mechanically blocking it.

Spivak reports a series of cases in which habitual constipation was frequently relieved by lavage of the stomach; this is attributed to excitation of the peristalsis. The lavage is continued daily for two to three weeks, and later at greater intervals. The treatments are given one hour before breakfast. The best results follow the use of cold water, or hot and cold alternately.

Schutz emphasizes the importance of examining the feces in cases of intestinal disease; the most important determination that is possible by an examination of the stools is whether mucus is present or not. Mucus in pathological quantities proves in cases of constipation (barring the readily diagnosed colica mucosa) the existence of intestinal catarrh, which is practically always a colonic catarrh. The discharge of pure mucus without feces, as well as the complete envelopment with mucus of solid scybala, especially small ones, points to catarrh of the lowest section of the intestines.

Lacerations of the pelvic floor demand surgical interference in order to correct the rectocele, thereby restoring the lacerated levator ani muscles and correcting the prolapse of the rectovaginal septum. The presence of tumors, adhesions, and other mechanical causes of constipation requires surgical interference. The profession is now fully cognizant of the rôle played by a redundant sigmoid, and the relief afforded by appropriate surgical treatment.

THE UNITED STATES PHARMACOPEIA AND THE NATIONAL FORMULARY.

BY E. O. FRANCKE, PH.G.,
Athens.

Mr. President and gentlemen of the Bradford County Medical Society. On the subject, The United States Pharmacopeia and National Formulary, I will attempt to prove five propositions.

1. The Pharmacopeia was originated by physicians and surgeons.

2. The contents of the Pharmacopeia prove that it contains the best arranged armamentarium for the use of the physician or surgeon.

3. The revision of the Pharmacopeia each decade, as provided by law, makes it the most reliable work that the physician can use.

4. Physicians and surgeons are recognizing more fully the advantage of using preparations of pharmacological formulas instead of secret proprietary products.

5. The coöperation of physicians and surgeons with pharmacists is necessary for the welfare of the people of the United States.

Shakespeare tells us, "There is some soul of goodness in things evil, would men observingly distil it out." How often we find the contrary true and the worker for the welfare of humanity cries out almost in dispair, There is some soul of badness in things good, would men observingly distil it out.

Nearly one hundred years since, in January, 1817, Dr. Lyman Spalding of New York City, submitted to the Medical Society of the County of New York, a project for the formation of a National Pharmacopeia. His plan was as follows: the United States was to be divided into four districts, northern, middle, southern and western. The New England states formed the northern district; New York, New Jersey, Pennsylvania, Maryland, Delaware, with District of Columbia formed the middle district; and the states south and west constituted the other two districts. The plan provided that a convention be called in each of these districts, to be composed of delegates from all the medical societies and colleges situated within each of them. Each district convention was to form a Pharmacopeia and appoint delegates to a general convention to be held in Washington, D. C. To this general convention the four Pharmacopeias were to be taken and from the material thus brought together a National Pharmacopeia should be compiled.

Dr. Spalding's plan was approved by the committee to which it was referred and subsequently through the agency of the Medical Society of the State of New York it was carried into effect. That society issued circulars requesting the coöperation of the several incorporated state medical societies, the several incorporated colleges of physicians and surgeons or medical schools, or such medical bodies as constituted a faculty in any incorporated university or college in the United States. And in any state or territory in which there was no incorporated medical society or school, voluntary associations of physicians and surgeons were invited to assist in the undertaking.

The district convention of New England was held at Boston, June 1, 1819. The district convention of middle states was held at Philadelphia, June 1, 1819, and two outlines of Pharmacopeias submitted by the delegates from New York and Philadelphia, were by a committee there chosen formed into one which was adopted as the Pharmacopeia of the middle district. There were no conventions held in the southern and western districts, but measures were taken by those concerned to secure a representation of the southern district in the general convention at Washington. The general convention assembled at Washington, January 1, 1820, at the capitol and elected Samuel L. Mitchell, M.D., president, and Thomas D. Hewson, M.D., secretary. The two Pharmacopeias prepared were submitted to examination, compared in detail and their contents with such additions as were thought necessary consolidated into one work which after full revision was adopted by the general convention and ordered to be published by a committee appointed for that purpose of which Dr. Lyman Spalding was chairman. It was published in Boston, December 15, 1820, in both the Latin and English languages, a second edition appearing in 1828.

Before adjourning, the general convention made arrangements for the future revision of the work. In each of the four districts writs of election were issued to each of the incorporated medical societies and incorporated schools and colleges of medicine in the district, requiring them to ballot for three delegates to a general convention to be held at Washington on June 1, 1830, for the purpose of revising the Pharmacopeia. Through a misunderstanding in the method of balloting two Pharmacopeias were published, one in New York in 1830, one in Philadelphia in 1831. The plan of the Washington Convention for a revision of the Pharmacopeia in 1840, was generally recognized as the most feasible and was fully carried out. In this convention the various colleges of pharmacy were invited to participate. The work was published early in 1842. In this version the percolation process was first introduced and the Latin text omitted, and the convention also provided for a revision in 1850.

By the authority of the convention of 1850 the Pharmacopeia was revised and published in 1851; before adjourning the convention made arrangements for revision in 1860. This convention met in Washington in May, 1860, and the revised book was published in 1863. The convention also made arrangements for a convention to revise the work in 1870 before adjourning. This convention met in Washington in 1870 and the revision was published in 1873, and provisions for a convention in 1880 were adopted. The convention of 1880 met at Washington, seventy-five delegates attending the meeting. Important changes were directed to be made in the Pharmacopeia, the more prominent ones being the following: All articles were to be arranged in alphabetical order; a new chemical nomenclature was to be introduced; quantities were to be stated in parts by weight and descriptions of crude drugs and chemicals were to be made more comprehensive and exact. Numerous tables were also to be added. The sixth revision was published at the end of October, 1882.

The convention for the seventh revision of the Pharmacopeia met at Washington May 7, 1890, one hundred seventy-five delegates being present, representing the medical departments of the army, the navy, marine hospital service, fifteen medical associations, twenty-three medical colleges and universities, twenty-five pharmaceutical associations, and twenty-three colleges of pharmacy and universities. Dr. Horatio C. Wood was chosen president. It was recommended by the convention that assay processes should be appended to the pharmacopeial descriptions of the energetic or otherwise important drugs, and to such galenical preparations as the committee of revision should deem wise, especial care being taken that the assay processes for opium and cinchona should be attended with as little manipulative difficulty as possible; that the standard purity for drugs should not be above the point of practicability, that the strength of the official tinctures and wines should be ten per cent., as far as advisable in the judgment of the committee; that no substances protected by proprietary rights or produced solely under a patented process should be introduced into the Pharmacopeia.

In regard to weights and measures the principle of parts by weight was abandoned, and the committee was instructed to direct solids to be weighed and liquids to be measured, except in such cases in which the committee would find it advisable to use weights only, also that the metric system should be employed. The committee of revision consisting of twenty-six members, proceeded to a revision of the work as per instructions, using solely the metric system of weights and measures, and the seventh revision was published in September, 1893, and became official January 1, 1894.

The eighth decennial convention for the revision of the Pharmacopeia met at Washington, May 2, 1900. Dr H. C. Wood was chosen president. The committee of revision of the present Pharmacopeia is an integral part of a chartered organization, the United States Pharmacopeial Convention, chartered under the laws of the District of Columbia. The business management is now vested in a board of trustees. The work of revision has been conducted mainly on the plan of the two previous revisions. The scope of the new Pharmacopeia was settled in detail through correspondence, and a provisional list of admissions and expurgations was adopted. Purity standards for drugs and chemicals and substances used for medicinal purposes were incorporated in the work. Assay processes for aconite, belladonna, cinchona, coca, colchicum seed, colchicum corm, conium, guarana, hydrastis, hyoscyamus, ipecac, jalap, nux vomica, opium, physostigma, pilocarpus, scopola and stramonium, were appended to the descriptions of the named drugs, and the average dose of medicinal substances stated, with this distinct declaration: That neither this convention nor the committee of revision created by it, intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable.

In regard to atonic weights, hydrogen as 1 with oxygen as 15.88 was adopted as the standard in this work. The committee was authorized to admit any synthetized product of definite composition, which is in common use by the medical profession, the identity, purity, or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret or if it be coutrolled by unlimited proprietary or patent rights. Diphtheria antitoxin and thyroid gland dried, also suprarenal gland dried, were introduced. Fluid extracts are found under the letter F. "fluid extractum," being one word in this revision. The table of elements adopted were those of the international committee on atomic weights, 15° C. or 59° F., was discarded and 25° C., 77° F., was adopted as the official temperature for specific gravities and solubilities.

The saturation tables have been carefully recalculated upon the basis of the adopted standards of strength or percentage of pure substance of the respective acids, alkalies or salts, and their corresponding revised molecular weights. In the present book are 958 articles in the text, 155 test solutions and volumetric solutions, 149 volumetric assays and 35 gravimetric assays, making in all 1297 articles. This Pharmacopeia went into effect September 1, 1905.

A letter just received from Dr. Joseph P. Remington, Chairman Committee of Revision, is as follows: "The new Pharmacopeia, ninth revision, will probably be issued in six months. The new revision will differ from any previous revision in being far more authoritative than any previous edition because it will have been issued after the passage of the Food and Drugs Act on June 30, 1906. Before this date the book was received as a guide to the practice of medicine and pharmacy voluntarily, but the Food and Drugs Act made it compulsory because the law compelled the use of the standards therein contained.

"One of the new features of the new book will be the introduction of standard abbreviations for the articles,—thus legalizing short names for use in prescription writing and labeling shop bottles. Abbreviations are universally used for such purposes, but there never has been an attempt made to legalize them or have anything like uniformity. The unabbreviated official name for the old preparation of Elixir of Vitriol is Acidium Sulphuricum Aromaticum, with the English name, Aromatic Sulphuric Acid. Everyone will understand that the abbreviated name, Acid. Sulph. Arom., means this preparation. Heretofore physicians have been writing Ac. Sul. Ar. and many other variations according to the taste and time of the writer. By establishing one abbreviation for each preparation mistakes will be avoided and a uniform language for prescriptions and shop bottles will come into use. This, of course, will take time to accomplish, but it is a step in the right direction. The new British Pharmacopeia, just issued, has adopted the plan of the new United States Pharmacopeia and has printed a table of abbreviations so that the two English speaking countries will be in accord on this subject."

In regard to the National Formulary, too much space would be necessary to give an adequate idea of the extent of its scope, and I will merely state that it is supplementary to the Pharmacopeia, containing formulas and preparations discarded or not deemed of sufficient importance to be incorporated in the work. The Pharmacopeial and National Formulary standards are compulsory under the food and drugs act of June 30, 1906.—*Bradford County Medical Society News*, March, 1915.

COUNTY SOCIETY REPORTS.

BEAVER—February.

The Beaver County Society held its regular monthly meeting at Rochester, February 11, at 3:30 P.M., with twenty-two members present. A new fee bill was presented for third reading, and adopted. It does not contain so much increase in rates as a suggestion for uniform rates. Both surgical and medical fees were given a minimum and maximum rate. The rate for smallpox was increased from $5.00 to $10.00 and other contagious diseases advanced from $2.00 to $4.00. A charge for telephone consultation was also added.

Dr. E. A. Weiss of Pittsburgh gave a talk on "Early Diagnosis of Cancer Within the Pelvis." He expressed himself very concisely and the scope of theme covered was greatly advanced by stereopticon views illustrating each step of the lecture. A brief résumé of his talk is as follows: The clinical diagnosis of cancer of the pelvis depends largely upon the office examinations. While the laboratory is a valuable aid and should always be resorted to in these early cases, it very often but confirms what a thorough examination has already demonstrated. A case thoroughly examined in the office, history taken and patient kept under observation for a few days or a week is often sufficient to make a diagnosis and very often the only means at the command of the general practitioner. Cancer of the fundus of the uterus is of slow growth, frequently benign at beginning, and much more time may be taken to make a report than when the cancer is in the cervix. The cylindrical cells in the region of the fundus do not undergo the rapid changes of the squamous cells of the cervix. More harm may result in a few weeks delay of involvement of cervix than in many months' delay when the fundus is involved. A common type is a growth attached to a pedicle running up into the canal of cervix. This is always benign and removal causes no further trouble. Copious hemorrhage at irregular intervals is the leading symptom of this condition.

In cancer of the cervix an early diagnosis is imperative. All cases having profuse or irregular bleeding, especially those after the menopause, should be examined. If patient refuses examination, refuse to take the case. The physician who administers a drug, orders a douche and rest, and does not make an examination is not going to benefit a patient and is no better than a quack in his methods. Bleeding from the cervix may occur from pregnancy, polypi, erosion, etc., but each demands examination. Friability of tissue is the important symptom of cancer of cervix. A portion may be scraped off with finger or dull curet. In no other condition is this found. Sharp elevations surrounding the cervix are usually crypts and are benign. A few local treatments will remove these. Granulations of tissue in stellate tears often follow lacerations for many weeks after delivery, and the application of styptic drugs for a short time will relieve this condition where cancer would only become aggravated. It is not always wise to repair these lacerations in a woman who is still bearing children. Where the squamous epithelium has been destroyed clear down to the muscle, cancer is always in evidence. This can readily be distinguished from multiple polypi. The bleeding from a cancer of the cervix may be very slight whereas some benign conditions are copious.

Cancer of the vagina is rare but cases are occasionally seen in practice. Only the prompt surgical interference avails as the prognosis is not good. Venereal warts and other conditions should be excluded.

Cancer of the fundus is more difficult to diagnose as part is more accessible and there is no foul discharge early. Cases of bleeding from the fundus should be curetted. Polypus and retained portions of placental tissue should be excluded before diagnosis is made. A foul, watery, extremely offensive discharge is suspicious of cancer. No sloughing is in evidence early. A caseous, friable material is obtained when cancer of fundus is present at an early stage.

In making a diagnosis of cancer of the pelvis, keep in mind the following things: The laboratory is only an aid to diagnosis and the clinical symptoms must be given careful consideration. The age of the patient does not have the bearing often given in textbooks, as cancer is common between thirty and forty years and frequently occurs earlier. These cases often get less attention because of frequent pregnancies, while bleeding and discharge after menopause usually elicits more attention from the physician and these cases do not reach the advanced stage. Require your patients to present themselves at regular intervals for examination. The family history does not have any weight in the diagnosis of these conditions. Cancer of fundus does not usually extend to cervix. The treatment is early operation. The *x*-ray and radium are yet inaccessible to the larger number of patients owing to the lack of facilities and expense involved.

A vote of thanks was extended to Dr. Weiss for his helpful discourse.

Margaret I. Cornelius, Reporter.

CHESTER—March.

The Chester County Society met at the Chester County Hospital, West Chester, March 16. The subject for the afternoon was "Diabetes Mellitus."

"Transitory Glycosuria" was presented by Dr. W. T. Sharpless who laid much stress upon the pathology of the condition. It is not alone the finding of sugar but the symptom complex which mark the condition. It differs from true diabetes in that it is not progressive, does not affect the nutrition, and there is an absence of toxic symptoms. The three important factors to bear in mind are (1) diet, elimination of all carbohydrates; (2) the proper amount and kind of food; (3) appearance of acetone and diacetic acid.

Dr. A. H. Hopkins, who has been doing a great deal of research work at the University of Pennsylvania, read a paper on the "Results of Recent Research Work in the Study of Diabetes." He dwelt particularly on the Allen method of treatment as practiced by Dr. Allen of Harvard University, who has done more experimental work along this line than any other man. It consists principally of regulation of food, and treatment with the use of whisky. A number of the West Chester physicians could not see the advantage of the use of liquor and Dr. Hopkins tried to make the treatment seem very feasible.

D. Edgar Hutchinson, Reporter.

DAUPHIN—February.

The meeting of the Dauphin County Society was held in the lecture hall of the Harrisburg Academy of Medicine on the evening of February 2, President Douglass presiding. The subject under consideration was "Blood Pressure." Dr. Hugh Hamilton presented, for the first time, his pocket mercurial sphygmomanometer and described the instrument and its uses as follows:—

The clinical importance of the weight or pressure enough to stop the radial pulse, called blood pressure, has become a growing necessity. The blood pressure varies under many extraneous influences, but is when constant an early and reliable indication of commencing pathological change. I here show you a blood pressure by the use of actual avoirdupoise weights such as are found at the common grocery store, attached directly to the "cuff" by a "Y" connection, thence to the mercurial manometer so that the force, weight or pressure is indicated on the millimeter scale of this sphygmomanometer at (in this instance) 160 mm. less friction in the device for raising 29½ ounces the equivalent to that mark on the scale of the sphygmomanometer.

To solve the problem of reduction in bulk (to actually be small enough to be put into and concealed in the pocket of an ordinary sack-coat) of an accurate mercurial sphygmomanometer is the successful effort made by me. After careful comparison the mercurial column must be regarded as the most certain to give true results, because it is fixed at zero by gravity and not through referable standards, as all spring and dial instruments are, and further, at an inopportune moment may loose their zero, which automatic quicksilver will not do.

In this little box I have added, besides the "U" tube, a thermometer for the room temperature at the time of taking an observation of a blood pressure, the body temperature is also taken at the same time. Across the space between the "U" tube a level is inserted in the wooden support. The wooden support, for the "U" manometer of the sphygmomanometer, is a free lid to the box, the edge under the curve of the "U" fits upright into a slot in the center of the box, (making an inverted "T" fastened by braces rising from opposite ends of the box: upon the bottom of the box are four blades that extend at right angles to the length of the box, when opened resembling a "turtle." This diminutive box which rests in the palm of the hand (pardon its crudeness—I made it myself) is 8½ inches long, 2½ inches wide and 1¾ inches thick or 22 cm. by 7 cm. by 3 cm. The hope is that this small accurate clinical mercurial sphygmomanometer (a real pocket-case) will be available in private bedside practice and assist one in precise prognoses.

Dr. George Moffitt read a paper on "The Value of Blood Pressure" in which he brought out the following valuable points: The estimation of arterial blood pressure has become in the past few years a matter of great importance to both physician and surgeon, as a symptom to aid diagnosis, as a factor in prognosis and as a guide to treatment. The pressure of the blood within the arteries depends upon the force of the heart, the tension and diameter of the arterial walls and the amount or volume of the blood stream. The highest pressure, which is caused by the systole of the heart is known as the systolic pressure, while the lowest pressure which occurs between the pulse beats is known as the diastolic pressure. The pulse pressure, which is also called the pressure range, is the difference between the diastolic and systolic pressures. The mean pressure is the average of the diastolic and the systolic. The two forms of apparatus used for determining arterial pressure are the mercury and the aneroid types, both depending upon air pressure to cut off the circulation. A rubber cuff is applied to the arm which, when filled with air, cuts off the circulation and causes the mercury to rise in the one and the indicator to swing around on the dial on the other, this dial being similar to a steam-pressure gauge. The normal systolic pressure according to Janeway is: Below two years 75-90 mm. of mercury, children 90-110 mm. of mercury and adults 100-120 mm. of mercury. The diastolic pressure should be from 25-40 mm. below the systolic. The pressure is about 10 mm. lower in the female than in the male. There are three ways of determining the pressure, the visual, the tactile and the auscultatory.

The determination of the venous pressure may be carried out by much more complicated methods than are required for the arterial. At present a knowledge of venous pressure is of little value to us but in the future it probably will become very important in diagnosis and treatment. The blood pressure may be altered by posture, pain, fear, anxiety, emotional excitation, exercise, exhaustion, cold, physical injury, anaphylaxis, acute fever such as typhoid, pneumonia, cholera, wasting diseases as tuberculosis and cancer, chronic conditions as arteriosclerosis, the various types of nephritis and cardiac conditions and by drugs. The acute fevers, wasting diseases, shock, exhaustive fevers produce a condition of hypotension while nephritis and eclampsia, arteriosclerosis and cardiac hypertrophy cause hypertension. In conditions of hypertension death occurs from apoplexy or cardiac fatigue. In nephritis it is dangerous to reduce the tension as urinary suppression may result. Aortic regurgitation causes a great increase in the systolic pressure but a marked decrease in the diastolic. Of the drugs used to raise the pressure, adrenalin is the most important and is best administered intravenously with normal saline. Its effect is not lasting. Caffein and atropin raise the pressure slightly, digitalis also will raise it if it is low. Strychnin has no effect whatever upon the pressure. It may be raised by bandaging the extremities, applying pressure to the abdomen, supplying blood to the brain by posture and by transfusion of human blood. Intravenous injections of saline do not maintain pressure for any length of time, although it is of service in an emergency especially if adrenalin is added. Of the means to reduce pressure, blood-letting is foremost. Aconite, veratrum, nitroglycerine, amyl nitrite and other nitrites may be mentioned. Veratrum is frequently used in eclampsia. The effect of nitroglycerine is usually lost in a half hour and the effect of the other nitrites in less time. H. Hershey Farnsler, Reporter.

ELK—March.

The Elk County Society met at St. Marys, March 11, with an attendance of thirteen. It was moved, seconded and passed that the society contribute five dollars to the Pennsylvania Society for the Protection of Scientific Research. It was moved that we endorse the report of the Committee on Expert Testimony and that copies of the endorsement be sent to Representatives Flynn and Goodnough, and Senator Hindman.

Dr. J. C. Stilley, in his paper which was read by the secretary, reported three cases of eclampsia and drew his conclusions that any pregnant woman with high blood pressure, intense headache, with albuminuria, was a potential eclamptic and the uterus should be emptied in the shortest time by the most conservative method. The discussion, in which every one took part, was very interesting. It was finally agreed that treatment was prophylactic and that each would follow the line of treatment and management that had given him the best results in the past. S. G. Logan, Reporter.

ERIE—February.

The Erie County Society held its regular meeting in the public library, February 2, Dr. Wallace R. Hunter presiding.

Dr. Charles G. Strickland read a very interesting paper on the treatment of eclampsia. In it he advised eliminative measures, rapid dilatation and delivery in those cases with dilated cervix. But where there were neither dilatation nor shortening of the cervix and where there was ready access to a hospital, he advised abdominal Cesarean section. He reported three cases of the latter type on whom he had performed this operation with delivery of living children and perfect recovery of the mothers.

Dr. George B. Kalb opened the discussion by citing several cases wherein he had practiced rapid dilatation and delivery with rather poor results and believed with Dr. Strickland that the Cesarean operation offered the best chance to both mother and child.

Dr. D. H. Strickland thought there were entirely too many Cesarean operations performed at the present time without sufficient indications, that the morbidity in these operations caused by adhesions, possible hernia and rupture of the scar in the uterus in subsequent pregnancies far outweighed the laceration of the cervix caused by rapid dilatation and delivery. He reported several cases where elimination, rapid dilatation and delivery were followed by recovery of the mothers and children and no morbidity. Dr. J. E. Silliman reported fifteen or more cases in his practice with excellent results. C. H. McCallum, Reporter.

JEFFERSON—February.

The Jefferson County Society met at the Acorn Club Rooms, Dubois, February 11, at 2 p.m., roll call showing twenty-five members present, the largest attendance for some time. Dr. A. P. Hull of Lycoming County, Dr. McAllister of Ridgway, and Drs. Brockbank, Beale, Hughes, and Sullivan of Dubois, were present as guests.

Under communications, the secretary read an invitation from the Clearfield County Society to join them in a joint meeting at Dubois during the month of June. On motion the invitation was accepted and the secretary was notified to accept for the society.

A communication from the Philadelphia Pediatric Society was also read and their proposed application to the Medical Society of the State of Pennsylvania for a section on pediatrics was endorsed by vote.

Dr. A. P. Hull, in his paper on "Gall Bladder Diseases" stated that fully 60 per cent. of that disease comes under the head of medical treatment. The greatest defect in medicine to-day is in defective diagnosis. The surgical removal of gallstones does not cure gall bladder disease and the physician should refer to the surgeon only those cases in which persistent medical treatment has failed.

Medical treatment should aim to prevent obstruction and stasis of bile. Urotropin in massive daily doses has been recommended by some, and its claims denied by others. Heavy meals have been found to stimulate the production of bile; frequent small meals stimulate a frequent flow and are recommended.

There is no special gall bladder disease diet, it should be a diet that favors the maintenance of normal intestinal peristalsis. Treatment consists of rest and an abundance of hot water to increase the fluidity of the bile.

In the discussion which followed Dr. Hull's paper, the pendulum swung from Free's treatment "There is no medical treatment for gall bladder disease; don't delay in sending your patient to a surgeon," to Dr. Beyer's and Dr. Hull's view "Do not hurry your patient to a surgeon." It is a sad fact however, that many of these patients are no better—in fact not so well, after operation, than they were before. Dr. Murray spoke of the need of thorough diagnosis previous to calling for surgical aid and mentioned the value of the radiograph in diagnosis. Dr. Lorenzo reported a case diagnosed as gall bladder disease, which after incision proved to be appendicitis.

Dr. W. F. Beyer spoke at length on his own case of cholelithiasis, from which he has been an occasional sufferer for many years. He has obtained great benefit for himself and in his practice from large doses of sodium phosphate taken with large quantities of hot water, once or twice weekly. Dr. Beyer himself, presents strong evidence as to the efficacy of his treatment. Dr. Hughes spoke of a case that he had observed in which the oft-repeated diagnosis of cholelithiasis, was finally changed into ureteral calculus, under Dr. David Riesman, and successfully treated surgically.

Dr. Johnstone's paper on "Cesarean Section" was a very thorough exposition of the subject. In his conclusions he stated that the tendency of these times is towards humanitarianism. Cesarean section is in this direction, and we must follow in its lead. Used judiciously it has done more to forward the progress of obstetrics than any other measure since the innovation of asepsis. When the indications for it exist, we must recognize them promptly and, knowing them, earnestly and intelligently urge its claims. The results of the operation lie not wholly in the hands of the operator, but largely in the hands of the one who has been in attendance.

Therefore it is the duty of every obstetrician to keep in mind the indications for the operation, the contraindications, and to remember that the latter are not as a rule inherent in the case itself, but arise through neglect in its early care. To-day infection is the great danger from which the woman about to be sectioned is to be protected, and the presence of infection must be regarded as a contraindication to the operation, unless there be no other recourse without the sacrifice of life.

W. C. Mills, Reporter.

LACKAWANNA—February.

The Lackawanna County Society held its usual weekly meetings during February with good attendance at each session. The three scientific meetings were characterized by unusually good papers and provoked much animated and enthusiastic debate.

The business meeting on February 9 was well attended and much interest shown in the business side of conducting the society. There was apparent a disposition on the part of the society to scrutinize closely the records of applicants for membership. The society has been getting much favorable publicity the past year and if it is to continue to command prestige and be a power in local and state affairs it desires that the personnel of its membership should approach the highest standard.

On February 16, "Acute Appendicitis" was discussed. Dr. J. Norman White took up the "Etiology, Pathology, Symptomatology, and Diagnosis." Dr. Reed Burns discussed "Treatment." He said that in his judgment it made no material difference as to which method was used in removing the appendix. Dr. Burns believes in flushing the abdomen in cases of free pus but laid emphasis upon the fact that there was a right and a wrong way. He also called attention to the fact that there were cases where it became necessary to open up the gut and flush it also in order to rid it of its toxins, if the patient is to be given the most of his chances for recovery.

Dr. E. L. Kiesel discussed the "Medical Aspects" with reference to those cases which arise during the course of some other disease.

On February 23, Dr. J. C. Reifsnyder presented to the society a review of the work that the state has been doing in the work of prevention of disease in general and of tuberculosis in particular. He then took up the treatment of tuberculosis and, while he had nothing new to offer in the way of treatment, he said, he wished the coöperation of the family physicians for a more prolonged stay at the sanatoria than that usually advised in the past. He stated that cases in which they were able to effect a cure were those which had had such treatment and that no very great permanent results were obtainable by a stay of a few months at the hospital.

Dr. Charles Falkowsky opened the discussion. His association with the local tuberculosis dispensary, he said, showed that the men were not referring the cases to the dispensary early enough, and pointed out the many advantages of early diagnosis and early treatment.

"Some Conquests of Peace," a talk on hygiene and the advances made by modern medical and surgical progress, was delivered by Dr. William Rowland Davies of Scranton at the High School auditorium on the evening of February 26. The lecture was given as an adjunct to the night school courses and was open to the public. The State Department of Health by courtesy of Dr. Samuel G. Dixon furnished their exhibit on preventable diseases, to make the affair as educational as possible. Dr. J. C. Reifsnyder of the local state branch was in charge of the exhibition features.

Artuhr E. Davis, Reporter.

LEHIGH—March.

The monthly meeting of the Lehigh County Medical Society was held in the Administration Building, March 9 at 2:30 p.m. The society unanimously endorsed the Geiser Open Door Hospital Bill, and ordered that the representatives of the local legislative district be notified.

Dr. F. A. Fetherolf read a paper on "Indications for Operation in Gallstone Disease." Early operation was particularly advised to preserve the gall bladder which has the important function of secreting mucus and it is this mucus which prevents acute pancreatitis. Autopsy statistics are not considered reliable. The many advantages of early operation were carefully considered.

Dr. M. J. Backenstoe presented a paper on "The Significance of Jaundice." The various causes of jaundice were fully outlined and considered. Jaundice is only a symptom and to treat a case intelligently a correct diagnosis of the cause must be made.

W. D. Kline, Reporter.

MONTGOMERY—February.

The Montgomery County Society met at Charity Hospital, Norristown, February 3, in open meeting for the showing of cases and specimens. The following cases were shown: Dr. E. S. Buyers showed a monstrosity, full term fetus, and also reported a case of purulent appendicitis, and exhibited the appendix. Dr. H. A. Bostock showed the old instruments of Dr. Pauling. Dr. R. Fabbri reported a case of eclampsia; thirty convulsions had followed a successful delivery. Dr. C. Z. Weber reported several obstetrical cases. Dr. H. C. Welker reported several cases of gallstones and several cases of appendicitis. Dr. F. C. Parker showed a man upon whose orbit he had grafted skin in order to make a suitable socket for an artificial eye. Many other interesting cases were reported by the men present.

At the meeting of February 17, Dr. Richard C. Norris, of Philadelphia, gave a lecture upon "Danger Zones in Obstetrics." He brought out the following points: (1) Pernicious vomiting should be regarded as serious when all food is rejected by the stomach, the tongue is red and glazed, all nerve sedatives fail and the patient desires to remain in bed constantly; in all these cases take the blood pressure often. (2) Diagnosis between early abortion and ectopic pregnancy. (3) Placenta prævia, diagnosis between the different kinds. (4) Pelvic deformities, diagnosis in primipara; use ether for internal examination. (5) Management of malpositions. (6) Prolongation of pregnancy. (7) Emergencies calling for rapid deliveries, such as detached placenta prævia and eclampsia.

Drs. H. H. Whitcomb, C. H. Mann and many other members entered into the discussion.

EDGAR STANLEY BUYERS, Reporter.

NORTHAMPTON—FEBRUARY, MARCH.

The Northampton County Society met at the Easton Public Library, February 19, at 11 A.M., President Zulick presiding. An amendment to the by-laws was offered, making it incompatible with membership if a physician agree to treat lodge members or other families or individuals by contract. Contract practice of both these varieties exists in the county.

Dr. A. C. Morgan of the Medico-Chirurgical College of Philadelphia spoke on "The Relation of Pleurisy to Tuberculosis." He dealt with the symptomatology, diagnosis, treatment and prognosis. Particular attention was paid to the very valuable information to be obtained by systematic temperature record of the case. In incipient tuberculosis the morning temperature is subnormal with the afternoon temperature slightly above normal. In an active case, before mixed infection or advanced stage has occurred, there is a constant, regular curve moderately above the normal line. In advanced stages, with mixed infection, the curve consists of points high above normal, with irregular depressions to the normal line, perhaps, at times. Taken with the other symptoms and signs, the temperature record offers very instructive additional data for diagnostic purposes. This paper was one of unusual interest to every one present.

The Northampton County Society met in the Easton Public Library, March 19 at 11 A.M., President Zulick and an unusually large number of members in attendance.

Dr. M. Howard Fussell of Philadelphia spoke on "Vaccine and Serum Therapy." He gave the pros and cons of this subject, and not the least valuable portion of the lecture consisted in his advice against the unscientific use of vaccines. He warned the general practitioner not to use "gunshot" or "mixed" stock vaccine, and also not to use vaccines "when the blood stream is infected," or when the infection is not localized. Tables were shown on the screen, giving the statistics in regard to typhoid fever in civil and military populations before and since typhoid vaccination came into use. Reference was also made to the use of diphtheria and tetanus antitoxin, special emphasis being placed on the fact that the death rate in diphtheria increases in direct ratio to the number of days elapsing between the day of onset and the day on which first dose of antitoxin is given.

Would that Dr. Fussell's paper could have been heard by every practicing physician in the county. Such a talk should do much to induce physicians to get their advance information (?) not from proprietary medicine pamphlets, but from reliable medical journals and medical books.

W. D. CHASE, Reporter.

PHILADELPHIA—JANUARY.

The Philadelphia County Society met January 27, at 8:30 P.M., President Montgomery in the chair.

William C. Gorgas, Surgeon-General, U.S.A., gave an illustrated lecture on "Sanitation in Panama." Our work in Havana and Panama is based upon that of great investigators who have gone before us. In the many years that I have been engaged in sanitary work in tropical and semitropical countries I have been impressed by the fact that the population in these countries is below the average in physical and mental ability. Most of the populations I have known have been the mixed races of the Spanish and Indian. The physical endurance of the original Spanish was extraordinary. They were able to march day after day in the tropics. They also were not of a low type mentally. A small part of the population of Panama is still Spanish. The Indian too at the time of conquest was very good physically and not low mentally. The present deterioration is attributed to the mixture of races. This deterioration, however, occurs in Europeans settling in these countries, and to my mind the greatest element lies in the infections so rife there, and chief among these in this deterioration is malaria.

Panama, from its location at the crossing place of the two oceans, was known the world over as probably the most unhealthful place in all the tropics, and the reputation was well deserved; I presume that more white men have died in Panama during the 400 years of its use as a crossing place than at any one place elsewhere in the world. The principal reason for this was that there were more unacclimated people here than any where else. Following the first 300 years of traffic came the construction in 1849 of the Panama railroad. The loss of life and interference with construction of this road on account of health conditions were very great. The tradition is that each railroad tie represented a lost life. Then came the much larger effort at construction under the French, when from sixteen to twenty thousand men were brought together and health conditions were very much worse than they had ever been before. The French had no system of reporting upon health conditions but many instances are well known of the great mortality. For example, the year before we went down the superintendent of the railroad had brought to the isthmus his three sisters, and within a month the three ladies had died. The first chief engineer under the French brought his family of four and within six months all had died of yellow fever. It is obvious that among those less well protected the mortality was greater. Of 24 nurses brought to the isthmus by the mother superior of the hospital 21 died within three or four years. One of the French engineers told me that he was the only one of seventeen alive at the end of a month after arriving at the isthmus. The French lost probably three out of four of the whites who went to the isthmus.

We took to the isthmus in 1913 about 10,000 Americans. Of these 6500 were men, the balance being their wives and children. Of these 6500 workers we had a death rate 2½ per thousand. We had a force of Americans running an average of 80,000 persons there for ten years. The mortality rate of 2½ per thousand was small in comparison with a similar force any where; very much smaller than the death rate in Philadelphia, I have no doubt. The manner of life was harder than that of any one in the tropics before, because a man in Panama worked day in and day out, week after week, and month after month, as a steam shovel man exposed to all conditions of weather. He was, however, thoroughly protected in his living conditions from the mosquito which carried the infections of yellow fever and malaria. This protection was the only difference in the conditions during the ten years of the work of the Americans and of previous workers. Therefore, I argue that the climatic conditions, the heat, the rain, the locality had no direct effect upon the health of the white man in the tropics. Very much more striking than the figures I have given you is the appearance of these 10,000 Caucasians. Anyone seeing the thousands at work on the isthmus would think they were Western farmers rather than mechanics with their sunburnt, ruddy appearance due to their work in the open. I am, therefore, inclined to look upon the race degeneration in tropical countries as due to infection. It is feasible, at reasonable expense, just as we have done in Panama, to protect the people of other tropical countries against infection and I am hoping such precautions will be adopted in those countries. Quinin is used extensively in the treatment of malaria and is made accessible without charge to the men. At first we put a certain amount of rum in the solution which was made into compressed tablets, with the idea of aiding absorption, but that led to a certain amount of abuse. A few of the men would make it a habit to meet the dispensing officer a dozen times a day. As he had no means of recognizing the men they would, of course, get a dozen doses of tonic instead of one. Lately, however, we found the rum was not necessary and it was omitted.

The hospital system at Panama is now represented by the one large hospital at Ancon which has a capacity of 2500 beds.

The Philadelphia County Society held a special meeting on January 29, at 8:30 p.m., with President Montgomery in the chair.

Dr. Guy Hinsdale of Hot Springs, Virginia, introduced the subject of hydrotherapy and balneology with special reference to thermal springs. These are taken to be of at least 70° Fahrenheit and may reach the boiling point. In Virginia the maximum is 106°; in Arkansas 147° and in the Yellowstone Park, 212°. They originate in very deep geological formations while cold springs, for example those of Saratoga and Mount Clemens, come from more recent sedimentary strata. This difference in origin has a bearing on their chemical constituents. The springs in New York and Michigan hold large quantities of sodium chlorid in solution; in the case of Mt. Clemens as much as fifteen thousand grains per gallon; while the Hot Springs of Virginia do not contain as much as one grain of that particular salt in a gallon. Radium is present in both hot and cold springs throughout the United States. Those at Hot Springs, Va., are higher in radioactivity than those of Gastein. Dr. Hinsdale showed a series of lantern slides illustrating the methods employed at Hot Springs, Va., including tub baths, douches, packs, cabinet baths and other features of hydrotherapy with appropriate apparatus. The attractive natural surroundings of Hot Springs were also shown. The advantages offered by American spas should be more generally appreciated, especially at present, when foreign resorts are, for the most part, closed to American tourists.

European spas have been more sharply differentiated from a therapeutic standpoint than have American spas but there is an appreciable tendency toward this in our country. The reputation of Hot Springs, Va., rests very largely on the use of the waters externally and internally for gout, rheumatism and nervous affections. Other springs are used in case of syphilis or cardiac affections.

Dr. Albert Warren Ferris, Director for the State Reservation at Saratoga Springs, N. Y., spoke upon "State Ownership of the Mineral Springs at Saratoga and Their Utilization under State Control." Colored lantern slides were shown covering the work of the Reservation Commission and the plans for erecting the American spa at Saratoga Springs. Dr. Ferris spoke without notes and referred first to the ancient Indian history and legend; to the older accounts of early settlers in the Saraghtoghie Patent, then to the history of the fashionable period when gay life and gambling were at their height at Saratoga Springs. He then described the recent developments of the past few years under the direction of the Reservation Commission.

A description was given of the geology of the region and the changes made through the faulting of the rock; the source and character of the mineral waters in the 160 wells, springs, and bores taken by the state, by purchase or condemnation, from nearly fifty owners; the classification of the drinking waters, and their medicinal ingredients, naming the diseases for which they were prescribed. Dr. Ferris described the bathing waters and their special features and outlined the disorders for which they were recommended and prescribed in many thousands of cases at the European spas. The radioactivity of all the Saratoga waters was said to be due not only to radium emanations, but also to dissolved radium salts. He spoke of the provision made for anticipated patients unable to go abroad because of the closure of Austrian and German spas and described fully the Park system at Saratoga Springs, the climate, the great abundance of ancient elms lining the streets and roadways, with their Gothic arches overhead; the numerous automobile state roads, and the general accessibility of the village from all points. Beginning with this summer patients may be sent to Saratoga Springs for definite courses of treatment and returned to their home physicians with a report from the medical attendant at the Springs.

The lantern slides showed the condition of the Springs in 1835 and succeeding years and during the antebellum period: the developments of to-day with geysers spouting twenty feet in the air; drinking water gushing and bubbling in glass bowls; the old High Rock Cone, first seen by the white man in 1643, when Father Jogues taken prisoner by the Mohawks in a skirmish with the Algonquins of the North, was brought to the "Medicine Waters of the Great Spirit," for refreshment after the battle. The character of the mineral waters was said to be not surpassed in the content of carbonic acid gas at any point east of the Rocky Mountains in this country, and probably at no point in Germany, unless possibly at Bruekenau, certainly not at Carlsbad, Kissingen, Nauheim, or Marienbad.

Dr. James M. Anders, in discussing: State ownership and control of the Saratoga Springs marks a decided step in advance and renders possible and ensures the same reliability of results as are obtained at the older European spas to which we have in the past sent thousands of patients. Such ownership also makes possible the development of methods and facilities for utilizing these waters for bathing and for drinking. I was particularly pleased to learn of the complete facilities for laboratory work which is a necessary part of the scientific study of individual cases.

Dr. James Tyson: The papers we have listened to this evening show that there has been a great change in the attitude of American physicians toward the use of the various baths in the treatment of disease as practiced abroad. In addition to the use of the natural baths the efficiency of the artificial bath of the nature of the Nauheim bath has been largely increased.

Dr. Jacobs: It has been my good fortune to have been at Bedford Springs. I should like to suggest that Bedford Springs is still a good place to which to send patients. The magnesium water there resembles that of Carlsbad, the locality is attractive and the results in the treatment of patients have been good. The place would seem to deserve more attention than Philadelphia has given it in the last few years.

WESTMORELAND—March.

Westmoreland County Society convened at 2 P.M. at City Hall, Greensburg, on March 3. Attendance was excellent and interest high. This session partook somewhat of the nature of a "welcome home" day. It was due to the scheduled appearance of Dr. E. H. Kloman of Baltimore who was at one time a Westmoreland County resident.

Dr. Kloman addressed the society in a paper covering "Preventation and Treatment of Relaxation and Tears of the Pelvic Floor." The subject appealed to practically every member because of the prevalence of the condition. Dr. Kloman strongly advocated, in repair of the deeper lacerations, that the fascia of the pelvic floor be, as nearly as possible, accurately replaced and sutured edge to edge. He distinctly holds the view that on the fascia, rather than the levator muscle, is the integrity of the pelvic floor dependent. It was made plain that prevention could not be absolutely assured in any given case but was to be sought in every one. Rapid extrusion of the presenting part as well as the shoulders are to be guarded against. Evidence was presented that more than ninety per cent. of primary labors are resultant in definite lacerations. The doctor expressed, in heartiest terms of approval, his appreciation of the value of pituitary extract in obstetrical work.

Dr. B. F. Ober of Latrobe read a paper on "Sanitary Preparation of Our Food Stuffs," which advocated state or federal supervision of foods, utensils, dishes, cutlery, servants and service in all establishments catering to the public. Dr. Ober showed that certain corporations had already voluntarily taken steps along this line.

Both papers were fully discussed and both were highly appreciated by the large attendance.

Dr. W. H. Taylor of Irwin presented two cases before the society of peculiar interest. The first was a case of osteomyelitis of the tibia which had undergone almost complete destruction of the bone as shown by accompanying x-ray plate. Present condition, as shown by both the bone and the later plate, consists of a regenerated bone and a healed leg. Case 2 was a healed fourth lumbar vertebra, sequential to tuberculous disease, for which a cast had been worn for six months. At the end of this period an abscess presenting in Scarpa's triangle was evacuated and the cavity injected with bismuth paste. Roentgenogram after pressure injection of bismuth shows lack of communication with the vertebra in question by an evidently healed area lying between the bone and the cavity, this condition evidently assuring a healed vertebral body.

D. Allison Walker, Reporter.

YORK—March.

The York County Society met in the parlor of the Colonial Hotel, March 4, at 1 P.M., Dr. Shatto presiding, and fifty-three members present. The average attendance for the first quarter of the present year is fifty-seven, or fifty-six per cent. of the total membership, a new record for the society.

Dr. Alonzo E. Taylor, professor of physiological chemistry in the medical department of the U. of P., addressed the society upon the "Diagnostic and Therapeutic Relations of the Nitrogenous Metabolism." The speaker clearly outlined the relations of known facts to the problems of nephritis. He stated that the many substances supposed to have been direct causal influences in the production of uremia, when injected, do not produce uremia. In fact, urine, under proper conditions, can be injected intravenously without causing intoxication. In nephritis, in the absence of the state of dropsy, there is usually equilibrium in nitrogenous metabolism, though there may, in certain stages, be minus balance, due to loss of body protein.

Dr. Taylor stated that, no matter whether nitrogen equilibrium be present or not, there is often accumulation of end-products of nitrogenous catabolism in the blood, in excess of normal figures. Figures for total nitrogen (nonprotein) in the blood plasma have usually the same meaning as figures for urea in the blood plasma. The facts for creatinin, the speaker stated, are not definite. Uric acid exhibits an increased threshhold value in cardiovascular nephritis, chronic gout and chronic lead poisoning. This tends to be independent of the in-put of exogenous purin; there is, however, delayed elimination of a known purin content in food. There is no evidence that uremia is due to the toxic action of any known substance in the urine. He stated that urine possesses, for practical purposes, only the toxicity of a hypertonic solution rich in potassium salts. The accumulation of urea in the blood is therefore not a direct toxic sign, but may be a valuable criterion of the state of renal functionation. Accumulation may run to five or more times the normal figure, and tends to be highest with the largest in-put of protein in the diet. In many cases, with reduction of proteid in the diet, the urea in the blood may fall to normal. Dr. Taylor asserted that a kidney that can not hold the urea in the blood to normal on a low protein in-put, say fifty grams per day, should be regarded as more diseased than a kidney that could clear the blood to normal on such an in-put.

The relation of urea in the blood to the amount and concentration of urea in the urine, in a measured and controlled period of time, gives promise of being a valuable clinical test for renal function. This relationship is expressed in the form of Ambard's coefficient, and the "constant" is equivalent to a numerator of the urea in the blood and a denominator of the square root of the amount and concentration of urea in the urine. Thus, in nephritis, we interpret an increase of urea in the blood to signify that the kidney does the total normal work of elimination, but only under the stress of abnormal concentration of urea in the blood. Objectively considered, one would expect a test of renal function based on urea to yield better results than a test based on elimination of a foreign substance. Of the latter tests, the potassium iodid, the lactose, and the phenolsulphonephthalein tests were employed, but the lactose test seems to be the most valuable. The latter is made by the intravenous injection of a properly pasteurized solution of twenty grams of milk sugar in twenty cubic centimeters of distilled water, and the frequent examinations, hourly or half-hourly, of the urine with Nylander's solution until the reaction for sugar ceases to be positive. Normally, all the lactose is excreted in four to five hours.

If, in eclampsia and impending uremia, the physician desires to cut down the work of renal elimination, reduction of protein catabolism is to be attained not by starvation (which does not reduce protein catabolism within five days) but by feeding freely of sugar (or sugar and starch), thus taking advantage of the saving power of glucose for protein. With the withdrawal of table salt, or a reduction to a minimum, and the reduction of the urea in the urine through lowering of protein catabolism, the work of elimination of the kidneys may be reduced about two thirds of the usual and normal extent. There could be no harm in such a regimen for five or even ten days, care being taken not to produce salt hunger; the protein starvation is tolerated for even longer periods. Some clinicians have even employed the injection of glucose solution intravenously. A lemonade containing one hundred grams of sugar, four times daily, reduces the urea from ten grams to three grams in twenty-four hours.

Dr. Taylor also made some very timely remarks relative to the recent trick of the antivivisectionists and urged every physician to fill out the yellow sheet in the February Journal, and to mail the same at once to Dr. Stevens. By a unanimous rising vote, which also expressed the thanks of the society, the distinguished speaker was elected to honorary membership.

The society endorsed the suggestion of the Philadelphia Pediatric Society to make application for a section on diseases of children in the scientific meetings of the state society.

Julius H. Comroe, Reporter.

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The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

Athens, April, 1915.

KNOW YOUR DRUGS.

The physician's success—the service which he renders to suffering humanity—depends largely on his knowledge of drugs. That this is being appreciated more fully at the present time and that physicians are anxious to be better informed in regard to drugs is emphasized by a paper on the United States Pharmacopeia and the National Formulary, read before the Bradford County Medical Society, which appears in this issue.

At the present time there are three books from which the physician who wants to avoid the prescribing of nostrums may select his drugs; namely, the United States Pharmacopeia, the National Formulary and New and Nonofficial Remedies. In order that he may use these books intelligently he should know what they stand for.

The Pharmacopeia of the United States ("U.S.P.") is prepared by a committee selected by a convention of pharmacists and physicians. As the pharmacists have for several decades predominated at the conventions, the Pharmacopeia presents the ideals of the pharmacists rather than those of the medical profession and the selection of drugs for the book has been made on the basis of commercial needs rather than on therapeutic efficiency. In other words, the book contains many drugs because they are prescribed or used, even though in the light of present knowledge they are known to be inefficient or inert. As the federal Food and Drugs Act requires that drugs shipped from one state to another must comply with the standards prescribed by the Pharmacopeia if sold under a pharmacopeial name and as the state health authorities and pharmacy boards are inclined to bring prosecutions under state laws against those who sell drugs or preparations which bear pharmacopeial names but do not comply with the standards prescribed, pharmacopeial drugs are likely to be of good quality.

The National Formulary ("N.F.") is published and owned by the American Pharmaceutical Association. Neither therapeutic worth nor extended medical use is a requirement for admission to this book. The object of the book is to provide formulas for drug preparations which are not described in the Pharmacopeia but for which there is believed to be some demand. As in the case of pharmacopeial preparations, the national Food and Drugs Act requires that preparations bearing titles recognized by the National Formulary, when sold in interstate commerce, shall be true to the formula of this book, and the authorities of the state health and pharmacy boards are more or less active in the prosecution of firms which sell products not up to the National Formulary standards.

New and Nonofficial Remedies ("N.N.R.") is published by the Council on Pharmacy and Chemistry of the American Medical Association, this council being composed of pharmacists, chemists, pharmacologists and clinicians. To this book are admitted those proprietary preparations whose composition is published, for which no unwarranted therapeutic claims are made and the use of which is not considered irrational or detrimental. It also describes non-proprietary articles, not admitted to the Pharmacopeia or the National Formulary, if these appear to have therapeutic possibilities. While the national Food and Drugs Act and the state food and drug laws do not recognize New and Nonofficial Remedies by name, these laws contain a general provision that drugs must comply with recognized standards. Thus the federal Food and Drugs Act declares a drug adulterated within the meaning of the act "if its strength or purity fall below the professed standard or quality under which it is sold." In effect, therefore, the federal and state laws give the same guarantee of reliability for these preparations which they give for the U.S.P. and N.F. preparations. In addition to this, the council periodically examines the market supply of the products which it admits to its book.

In brief, it may be said that the physician who limits his prescribing to the drugs of the U. S. Pharmacopeia, the National Formulary and New and Nonofficial Remedies may feel reasonably confident that his patients will receive the remedies which he prescribes. While thus safeguarded as to the identity of his drugs, the physician should remember that none of these books profess to be therapeutic guides. Inclusion in the Pharmacopeia means that a drug has or has had considerable vogue; admission to the National Formulary means that a standard formula is available; and description in New and Nonofficial Remedies signifies that a preparation is non-secret and is exploited honestly, an estimate of the therapeutic value being given in the book. W. A. P.

STUDY YOUR THERAPEUTIC WEAPONS.

One cause for the failure of therapeutics to keep pace with advance in other branches of medical science undoubtedly is the large number of therapeutic agents which are in use. The vast number of drugs, including those left to us by tradition, the American roots and herbs discovered for us by Indians and others, the endless array forced on us by proprietary interests and the uncritical discussion of these in materia medica textbooks and dispensatories, have done much to make inefficient prescribers of physicians. This is one reason why rational treatment so often is not the sequel of a correct diagnosis. It also explains why the public has been inclined to turn to faith healers, quacks and the patent medicine bottle for relief from its ills. The following letter sent to medical teachers by the Council on Pharmacy and Chemistry a few years ago brings out the conditions which existed at that time and to a large extent still exist:—

> ". . . The tyro has an unbounded faith in multiplicity of tools. As the student enters on his medical studies, he is apt to believe that 'there is an herb for every evil.' We need but glance about us to realize that many physicians have never outgrown this naïve faith; that they are still casting about for the supreme elixir.
>
> "This is a serious reflection on their medical teachers. Such men have never been properly taught to ask the why and the wherefore; to be wary of superficial impressions and of hasty judgment; to practice patience and accuracy in observation; to record and scrutinize their results. The cause of the faulty teaching has often lain in the attempt to teach too much. The average brain matter, when spread over an unlimited field, makes a very superficial coating. Is it not better to encourage the student to confine his study and practice to the relatively few drugs which are generally conceded to be useful; to encourage him to learn thoroughly and by actual observation their capabilities as well as their limitations? Is it not better to discourage the use of the vast number of drugs in which most of the modern critical clinicians have little confidence? In every case, there is surely a reason why the drug has failed to hold its own in the esteem of such clinicians. In most instances, untrained observers have been deluded by their own enthusiasm. In others, the actions and indications are not sufficiently well established to make their use profitable. The laboratory of Nature, as well as that of the chemist, is still stored with undiscovered discoveries in materia medica; but these can only be made available by critical study, clinical as well as experimental. They will only be discredited by their indiscriminate employment under unsuitable conditions. Injudicious and unbalanced enthusiasm is not the way to solid knowledge. . . ."

Attempts to secure revision of the U.S.P. and the N.F. on the basis of therapeutic efficiency having proven unsuccessful, the Council undertook to carry to completion a plan proposed by various teaching and examining bodies, namely, to select a restricted list of drugs to which teachers in materia medica and therapeutics might confine their teaching and medical examiners their examinations.

The outcome is "Useful Drugs," a book which presents a brief but practical discussion from the modern viewpoint of the properties, pharmacologic action, therapeutic uses and dosage of the drugs and drug preparations which have gained general recognition (360 taken from the U.S.P., 2 from the N.F. and 23 from N.N.R.). While the book was prepared primarily for medical students and while it is not the intent to curtail the free selection of drugs by the physician, it will no doubt prove of much value to the practitioner. The products described in it have been generally recognized as of therapeutic value and critically used they will be found to answer practically all demands of general practice. W. A. P.

ON THE PRESENTATION OF A THESIS BY CANDIDATES BEFORE THE STATE BOARD OF LICENSURE.

The instruction of medical students in the universities, and their training later in hospitals, is a matter well worth the attention not only of the members of the examining boards but of the entire medical profession of the state. The new ruling by which all graduates are required to serve one year in a hospital before presenting themselves for examination would appear to us to be a decided step in advance. It is important to consider now whether this one year's training can be made to produce more efficient practitioners. Those of us who have been connected with hospitals know that many residents are earnest and conscientious and eager to seize any opportunity to learn. A goodly proportion, however, seem quite the reverse. When one leads such men gently by the hand to an unusually interesting case and carefully points out the special features this type of resident may, it is true, gaze at the patient with mild interest but he will never under any circumstances hunt up anything unusual to study for himself. His sole object seems to be to get through his year's service with as little difficulty as possible and no one would dream that his taking an intern service was to learn clinical medicine. It may be that the attending staff and older physicians connected with the hospitals are to some extent responsible for the apathy shown by such individuals. It may be that such men need only the proper stimulus and that, with proper advice as to their medical reading and proper supervision of their work, their outlook on the medical sciences will undergo a change.

It has occurred to the writer that it would be a considerable stimulation to the energy of all types of residents if, during the year of their service, they were required to prepare a thesis based upon some phase of their work or upon some unusual and important case that has come under their observation, and present this thesis when coming before the examining board as a part of their qualifications.

This plan has been pursued abroad for many years and we feel that it could be applied in Pennsylvania with a great many advantages. In the first place we believe that it would do a great deal to waken residents up to the serious business of medicine and would very much improve the character of their service to their respective institutions. Secondly, a good thesis would be a guarantee to the examining board that the applicant had made good use of his time during his hospital service and had not merely put in a year's time with as little work as possible simply because it was required by law. Another way in which these theses would be of considerable use would be by making permanent record of important and unusual cases. In the various hospitals of Pennsylvania during the course of a year there are hundreds of scattered cases which should really have a permanent place in surgical literature. Under the present system these cases are nearly all wasted from this point of view. The visiting physicians on the staff at the hospitals generally do not like to report a single case no matter how interesting it may be. These theses could be printed at very slight expense at Harrisburg and sent to the various medical libraries, etc. Titles would then be published in the *Index Medicus* and the material would then be available for any future reference. It might well be that a few copies could be kept on hand at Harrisburg and sent at nominal cost to any physician who might be interested in any special title.

On the whole we can see no disadvantages and a great many important advantages in such a plan as this, and we recommend it seriously to the consideration of the various examining boards. J. M. W.

LISTS OF MEMBERS.

This issue contains sixteen pages more than the usual number and yet it has been necessary to lessen the space given to some departments and entirely omit other departments in order to make room for the annual lists of officers and members of component county societies. It is to be regretted that it has been necessary to omit the names of some former members because they have not paid their dues for 1915 to their respective societies. Each mail is bringing in reports and checks for per capita assessments for delinquent members. All such are promptly restored to membership but are not entitled to assistance from the Medical Defense Fund for any case originating between January 1, 1915, and the date of payment of their dues.

This issue of the Journal should be preserved for reference as there is frequent use for it. There is also a large demand for this number from insurance companies, publishers, etc., but it is not sold to unreliable parties or promotors of doubtful schemes. S.

"THE SAME OLD WOLF."

There will be found on advertising page XIII. a cartoon with the above legend which is especially appropriate at this time when "spring tonics" are supposed to be in demand, and when Mr. John A. Patten of the Cattanooga Medicine Company is suing the *Journal of the American Medical Association, Harper's Weekly* and Dr. Oscar Dowling, president of the Louisiana State Board of Health, for telling the truth about Wine of Cardui. If the Journal were to remodel this cartoon by labeling the sheep's skin "Methodist Episcopal Church," having the wolf assume the aspect of a corporation caring more for money than for the lives of innocent women, and attach "Wine of Cardui" to the animal's leg, who would be the prosecutor? Watch our next issue because there will be a cartoon in it. S.

THE SAN FRANCISCO SESSION OF THE A. M. A.

The American Medical Association will hold its sixty-sixth annual session at San Francisco, California, June 21 to 25. If you are thinking of going, address the American Medical Association, 535 North Dearborn Street, Chicago, Ill., giving the number that will probably be in your party, and you will be placed in touch with reliable sources of information. S.

MEMBERS RECENTLY DECEASED.

Allegheny County: T. Chalmers Christy (Bellevue Hosp. Med. Coll., '74) in Pasadena, Calif., December, 1914, aged 69.

Clarion County: Lee O'Dell (Cincinnati Coll. of Med. and Surg., '84) in Tylersburg, February 18, 1915, aged 57.

Lackawanna County: John Joseph Kelly (Univ. of Pennsylvania, '88) in Archbald, April 3, 1915, aged 57.

Monroe County: George H. Rhoads (Jefferson Med. Coll., '79) of Tobyhanna, in Savannah, Ga., February 25, 1915, from cerebral hemorrhage, aged 58.

Philadelphia County: Donnel Hughes (Univ. of Pennsylvania, '79) in Philadelphia, recently, aged 57. J. Paul Laurer (Univ. of Pennsylvania, '08) in Philadelphia. recently, aged 40. William M. McAlarney (Jefferson Med. Coll., '70) in Philadelphia, October 3, 1914, aged 73. William H. Randle (Jefferson Med. Coll., '78) in Philadelphia, April 2, 1915, as a result of mastoid infection. Jules M. Rosenbloom (Medico-Chirurgical Coll., '05) in Philadelphia, March 8, 1915, aged 36. Max J. Walter (Univ. of Pennsylvania, '12) in Philadelphia, April 17, 1915, aged 42.

Washington County: Frank L. Knox (Eclectic Med. Coll., Cincinnati, '98) in Claysville, March 15, 1915, aged 45. Joseph B. Irwin (Kentucky Sch. of Med., Louisville, '84) in Florence, March 15, 1915, from pneumonia, aged 63.

Mrs. Elizabeth M. Davis. The members of the society will regret to learn of the death at her home in Pittsburgh, April 15, of the wife of Dr. Thomas D. Davis.

REVIEWS.

THE TUBERCULOSIS NURSE. Her Functions and Her Qualifications. A Handbook for Practical Workers in the Tuberculosis Campaign. By Ellen N. LaMotte, R. N., Graduate of Johns Hopkins Hospital, Former Nurse in Chief of the Tuberculosis Division, Health Department of Baltimore. Introduction by Louis Hamman, M.D., Physician-in-Charge Phipps Tuberculosis Dispensary, Johns Hopkins Hospital. Price $1.50 net. New York: G. P. Putnam's Sons.

Five pages of this interesting volume are devoted to the salary of the tuberculosis nurse, and when and how much it should be raised. Other pages contain directions as to supplies. records, technical work, etc. These directions are very good for all we know about it, though being mere physicians this is nothing at all as the rest of the book amply shows.

A portion of the volume is devoted to demonstrating the fact that the principal obstacle in the prevention of tuberculosis is the medical profession. In fact the one great thing to be desired is for the medical profession to get out of the way. The sanitary officer and the tuberculosis nurse are of the most importance. It is unfortunate that this volume did not appear a generation ago. Trudeau, Flick, Biggs, Knopf, Ottis, and the many others would have had to hunt for useful occupations.

What is to be wished for is "a revolution instead of evolution in medical ethics." This is what the lady says but we do not think it is what she means. Medical ethics should be demolished and she should write a new code. The tuberculosis nurse is to carry out the orders of the physician or not as she deems best: that is, she is to separate the goats from the sheep in the medical profession, which means the same thing. "The greater number of private practitioners are either too busy, too intent on earning a living, too indifferent, or too poorly educated to assume effective supervision of an infectious disease which requires masterful handling." Dear me! J. M. W.

DIABETES MELLITUS. Designed for the use of Practitioners of Medicine. By Nellis B. Foster, M.D., Assistant Professor of Medicine, Cornell University, Associate Physician to the New York Hospital. Philadelphia and London: J. B. Lippincott Company. $3.00 net.

In this volume covering 240 pages Dr. Foster presents a critical sifting of the enormous literature which has appeared during the last decade upon the subject of diabetes mellitus. Designed for the general practitioner there have been omitted partisan theories and detailed discussion of individual views. Chapters 1, 2 and 3 deal with Normal Metabolism, Sources of Glucose in the Animal Body and Experimental Glycosuria, respectively, and pave the way for a clear conception of the pathogenesis, pathology, symptomatology, etc., which follow. The rather difficult subject of acidosis is covered in Chapter 4 with clearness. The author is of the opinion with regard to von Noorden's conception "that under certain conditiens the body can manufacture sugar from fat, and that the ketone bodies are in some way connected with this transformation," that such origin of sugar is absolutely undemonstrated.

In discussing the relation of injuries to the head to glycosuria, the author quotes his experience in twenty cases of fracture of the skull in which he found sugar in the urine in fourteen cases (seventy per cent.). The reader must be impressed with the fact that the failure to recognize this possibility may lead to grave diagnostic errors in certain cases of coma in which the clinical histories are obscure. The volume contains many such practical points.

The chapter devoted to treatment is concise, yet ample with regard to the details of diet, etc., and interspersed here and there with brief references to cases in which problems in treatment have arisen in the author's practice.

The final chapter deals briefly with the Identification of Sugars.

The book is of convenient size and the type large and clear. It can not be said to be comprehensive or to contain much more than is found upon the subject in the standard systems. The index is poor. There has been no attempt to append to the various chapters any extensive bibliography. The author has, however, in most instances, as stated in the preface, cited under each chapter papers containing references to which the reader might refer for access to the literature. The book contains safe and sane views and may be consulted with benefit by the busy practitioner who under the pressure of much work has neither the time nor inclination to delve into the enormous literature that has appeared upon diabetes in the last few years. E. H. F.

OFFICIAL TRANSACTIONS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Organized 1848. Incorporated December 20, 1890.

Officers and Members of the Sixty-three Component County Societies.

Too Late for Classification.

Clinton County: Kirk, Clair B., Mill Hall.
Philadelphia County: Hall, William D. W., 801 South Forty-ninth St.
Kobler, Henry B., Media and Sixty-third Sts.
Shammo, George C., 260 N. Fifty-second St.
West, Charles W., 1823 Pine St.
Somerset County: Korns, Charles B., Somerset.
Venango County: Roth, William R., P.R.R. Relief Dept., Jersey City, N. J.
Wilson, Calvin M., Franklin.
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ADAMS COUNTY SOCIETY.

(Organized August 25, 1904.)

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V. Pres.....Tempest C. Miller, Abbottstown.
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Sec., Treas.
and Rept....Henry Stewart, Gettysburg.
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J. L. Sheetz, New Oxford.
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Policy and
Legislation..Henry Stewart, Gettysburg.
R. B. Elderdice, McKnightstown.
Harry E. Getter, Littlestown.

Stated meetings the second Tuesday in each month at 2 P.M. in Gettysburg or other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (18).

Cashman, Elmer W., York Springs.
Crouse, Harry S., Littlestown.
Dalbey, James P., Gettysburg.
Dickson, John R., Gettysburg.
Elderdice, Robert B., McKnightstown.
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Gettier, Harry E., Littlestown.
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ALLEGHENY COUNTY SOCIETY.

(Organized April 20, 1865. Incorporated January 30, 1892.)

(Pittsburgh is the post office when the street address only is given.)

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V. Pres.....Elmer E. Wible, Diamond Bank Bldg.
Frederick A. Rhodes, 5119-20 Jenkins Arcade Bldg.
F.M. Storer, 821 Wood St., Wilkinsburg.
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Com. on Relief. J. D. Milligan, Ch., 347 Fourth Ave.

Regular business and scientific meetings at Dispensary Hall, 43 Fernando St., third Tuesday of January, February, March, April, May, June, October, November and December, at 8 P.M. Annual meeting, second Tuesday of January at 8:30 P.M.

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Black, Jesse L., 65 Washington Ave., 31st Ward.
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Davis, Fannie, 801 Arch St., N.S.
Davis, James A., 4704 Penn Ave.
Davis, James R., Sandles Flats, McKees Rocks.
Davis, Lawrence J., 110 Main St., Carnegie.
Davis, Mase S., Diamond Bank Building.
Davis, Thomas D., 261 Shady Ave.
Davison, Robert E., 8152 Jenkins Arcade Bldg.
Day, Ewing W., Westinghouse Building.
Dean, Howard E., 428 Liberty Ave., Braddock.
Dearth, Walter A., 7008 Jenkins Arcade Bldg.
Decker, Harry R., 1126 Highland Building.
DeMuth, J. Smith, Jenkins Building.
Denny, Clark B., Oakdale.
Denslow, Walter B., 3652 California Ave.
Dickinson, B. M., Keenan Building.
Dickson, Joseph Z., Westinghouse Building.
Diller, Theodore, Westinghouse Building.
Dillon, Charles A., 389 Butler St., Etna.
Disque, Thomas L., Jenkins Building.
Dixon, John W., 820 Wood St., Wilkinsburg.
Dodds, Wallace T., Penn and Highland Aves.
Donaldson, Holland H., 3600 Fifth Ave.
Donaldson, John S., 486 Lincoln Ave., Bellevue.
Donaldson, Walter F., 308 Diamond Bank Bldg.
Dornbush, Bertha E., 228 Amber St.
Douthett, Joseph M., Center Ave. and Graham St.
Dranga, Amelia A., Lyceum Building.
Duff, A. William, Keenan Building.
Duffy, Charles A., 3417 Ward St.
Duggan, John P., 817 Wylie Ave.
Duncan, James E., 328 Ward St.
Duncan, Joseph L., Jenkins Building.
D'Zumura, Andrew P., St. Francis Hospital.
Eakins, Olin Martin, Farmers Bank Building.
Eastman, Henry, Park Building.
Eaton, Percival J., 715 North Highland Ave.
Eber, Samuel I., 4120 Jenkins Arcade Bldg.
Ecker, Charles S., Oakmont.
Edgar, Joseph C., 609 Allegheny Ave., Oakmont.
Egan, Joseph P., 218 Braddock Ave., Braddock.
Eggers, August H., 5815 Rural Ave.
Eicher, Chas. G., 604 Chartiers Ave., McKees Rocks.
Eisenhart, James E., 1323 Federal St.
Elliott, Andrew H., 625 California Ave., Avalon.
Elliott, George B. C., 409 North Ave., Millvale.
Ellis, Charles J., 902 E. E. Trust Bldg.
Elphinstone, J. Wade, 3544 California Ave.
Elterich, Theodore J., 724 Highland Building.
Ely, George W., 7105 Frankstown Ave.

Emmerling, Karl A., 476 Rebecca St.
Engle, Guy D., 745 Trenton Ave., Wilkinsburg.
Erhard, Ernest L., Glassport.
Ertzman, Richard L., 710 Greenfield Ave.
Espy, John S., 4748 Friendship Ave.
Evans, David R., 2006 Carson St.
Evans, Edward E., 2715 Fifth Ave., McKeesport.
Evans, Thomas, Jr., Highland Bldg.
Everhart, James K., 3339 Forbes St.
Ewing, William B., Westinghouse Building.
Ewing, William H., Herron and Wylie Aves.
Eyman, William G., 956 Greenfield Ave.
Faulkner, Richard B., 306 Diamond Bank Bldg.
Fausold, Lucian C., Mt. Pleasant (Westm. Co.).
Fawcett, Charles E., Broadway and Potomac St.
Feltwell, Myrtle R., Sewickley.
Fenollosa, Sydney K., 4634 Fifth Ave.
Ferner, Joseph J., 5541 Ellsworth Ave.
Ferrari, Pasquale, 707 Webster Ave.
Ferree, Robert Burnsides, 622 Chestnut St.
Fetterman, James M., 112 Grandview Ave.
Fife, S. John S., Bridgeville.
Findley, Wm. McCrae, 1101 Franklin St., Wilkinsburg.
Fink, Harry M., Bessemer Building.
Finkelpearl, Abraham, 1906 Fifth Ave.
Finkelpearl, Henry, 1906 Fifth Ave.
Fischer, Henry F., Springdale.
Fischer, N. Arthur, 202 Forbes Building.
Fisher, Harrison Horton, 530 Lincoln Ave.
Fisher, Joseph W., 3517 East St., Observatory Sta.
Flood, Henry C., 842 South Negley Ave.
Fogleman, Adam P., Munhall.
Forster, William A., Sixth and Maplewood Aves., Ambridge (Beaver Co.).
Foster, Curtis S., 308 Diamond Bank Bldg.
Foster, James LeRoy, Box 18, Hoboken.
Foster, William S., 252 Shady Ave.
Frank, Austin C., Jenkins Arcade Building.
Franklin, Paul H., 276 Craig St.
Frederick, Frank H., 1403 Chateau St.
Frederick, William, Chartiers Ave., W.E.
Freed, Raymond S., 2010 Fifth Ave.
Freeland, James R., 4715 Fifth Ave.
Frodey, Raymond J., Empire Building.
Frost, Ellis M., 205 S. Craig St.
Frye, Daniel W., 2714 Glenmore Ave., Dormont.
Fulton, Louis C., Liberty Bank Bldg.
Gardner, Christopher C., 832 Braddock Ave., Braddock.
Gardiner, Francis G., 5144 Butler St.
Gardner, E. Roy, Ben Avon.
Gardner, William E., 733 Lockhart St.
Gardner, William H., 733 Liberty St., Allegheny.
Gaub, Otto C,, Keenan Building.
George, Shaul, Liberty Bank Building.
Gibans, Myer J., 1306 Fifth Ave.
Gilliford, Robert H., 1224 Fayette St., N.S.
Glenn, Milton L., 2220 Woodstock Ave., Swissvale.
Glynn, William H., 273 North Craig St.
Goehring, Walter G., 7644 Frankstown Ave.
Goldberg, Samuel, 817 Fifth Ave., McKeesport.
Goldsmith, Luba Robin, 520 N. Negley Ave.
Goldsmith, Maurice F., 9 Stevenson St.
Goldsmith, Milton, Jenkins Arcade Building.
Goodsell, John W., New Kensington (Westm. Co.).
Goodwin, Ralph D., 104 Electric Ave., E. Pittsburgh.
Gorrell, J. Franklin, Everett (Bedford Co.).
Gould, Margaret A., 606 Sherman Ave., N.S.
Graham, Norman R., Thirteenth and North Canal Sts., Sharpsburg.
Graham, Walter G., 7423 Race St.
Gray, Earl P., 510 Hay St., Wilkinsburg.
Grayson, Thomas Wray, Westinghouse Bldg.
Greig, Thomas G., 1501 Carson St.
Grekin, Jacob, 1538 Center Ave.
Grier, George W., Jenkins Building.
Griffith, John P., 4715 Fifth Ave.
Gross, Arthur H., 688 Forest Ave., Bellevue.
Gross, Julius Edward, 508 Jenkins Building.
Groth, Herman, 1523 Fremont St.
Grove, Robert E., 1600 Maplewood Ave., Wilkinsburg.
Guffey, Albert A., 310 Shaw Ave., McKeesport.
Guy, William H., 3725 Brighton Road, N.S.
Hagemann, John A., 400 South Rebecca St.
Hager, Christian, Braddock.
Hagmeier, Otto C., Reinholds (Lancaster Co.).
Hall, Alice Louise, 730 Fifth Ave., New Kensington (Westmoreland Co.).
Hall, John P., 6554 Frankstown Ave.
Hall, Henry M., Jr., 1415 Lang Ave., Homestead.
Hall, William T., New Kensington (Westm. Co.).
Hallock, William E., Fifth and Aiken Aves.
Halpert, Louis H., 16 N. Duquesne Ave., Duquesne.
Halverstadt, Charles H., Perrysville.
Hamilton, James M., Oakmont.
Hammett, James M., 919 Herberton St.
Hampsey, Alexander R., 2410 Arlington Ave.
Hankey, Stacy M., 1025 Highland Building.
Hargrave, Harry M., 226 Eighth Ave., Homestead.
Hanna, James A., 408 Chartiers St., Carnegie.
Harris, Ira C., 1032 Braddock Ave., Braddock.
Hartman, Clifford C., 355 Semple St.
Hartman, John C., Jr., 1630 Brinton Ave., Braddock.
Hartung, Frederick A., 606 Southern Ave., Mt. Oliver, Pittsburgh.
Harvey, Walter B., 1258 Ridge Ave.
Hawkins, John A., Jenkins Arcade Bldg.
Haworth, Elwood B., 145 North Craig St.
Hayden, Walter George, 7008 Jenkins Arcade Bldg.
Haymaker, William J., 1213 Wood St., Wilkinsburg.
Hays, George L., 1402 Murray Ave.
Hazlett, Theodore L., 205 Forbes Bldg.
Heard, James D., Liberty National Bank Bldg.
Heath, Robert M., Liberty Road, Fair Haven.
Hechelman, Herman W., 808 First Nat. Bk. Bldg., G.P.G.
Heck, Fred H., 1379 Lincoln Ave.
Heckel, Edward B., Jenkins Building.
Hector, Louis H., 706 First St., Allegheny.
Hegarty, John P., 818 Wylie Ave.
Heilman, Martin W., Brackenridge.
Heisey, William C., 733 May St., McKeesport.
Henney, Bernard J., 213 Fourth Ave., Carnegie.
Henninger, Charles H., Jenkins Arcade Bldg.
Henry, Edwin B., Ingomar.
Herman, Charles E., 25 Kismet St., Carnegie.
Hersman, Christopher C., 2228 Carson St., S.S.
Hesser, Andrew J., 4924 Liberty Ave.
Hicks, Abram V., 5408 Penn Ave.
Hieber, H. Chester, Jenkins Building.
Hierholzer, John C., Jenkins Building.
Hiett, George W., 4030 Perrysville Ave., N.S.
Hileman, Joseph B., Pitcairn.
Hill, Charles A., Keenan Building.
Hill, Ralph L., Woodville.
Hinchman, Robert S., 127 Fifth Ave., McKeesport.
Hirsch, Leon, Jenkins Arcade Building.
Hocking, William C., Duquesne.
Hodkinson, William A., 7441 Sunset Blvd., Soethout Bldg., Los Angeles, Calif.
Hoffmann, Joseph H., 124 Cohasset St.
Hoffmann, Norbert L., 124 Cohasset St.
Holliday, George A., Jenkins Arcade Bldg.
Holt, J. Floyd, 634 Herron Ave.
Holtz, Wilbur M., 435 Sixth Ave.
Hopkins, Alfred, Jr., 6101 Penn Ave.
Hopkins, Herbert J., 6101 Penn Ave.
Huffman, David C., 6th and Walnut Sts., McKeesport.
Hufford, James F., Elrama (Washington Co.).
Hughes, Reese W., 427 Third Ave.
Hughes, Willet P., 5500 Center Ave.
Hunter, Andrew, 817 Fifth Ave., McKeesport.
Husted, Alonzo Don, 73 Allen Ave.
Hutchinson, Henry A., Dixmont.
Huth, John A., Natrona.
Iams, J. Donald, Chartiers Ave., Sheridanville.

Hand, Edward M., Coraopolis.
Ingram, Clarence H., 903 E. E. Trust Bldg.
Irwin, John C., 3406 Fifth Ave.
Jackson, Chevalier, 1018 Westinghouse Bldg.
Jackson, Daniel F., Jenkins Arcade Bldg.
Jennings, Charles W., 304 Highland Bldg.
Jennings, Samuel D., Sewickley.
Jenny, Thomas C., Penn and Negley Aves.
Jew, Henry D., 2306 Darlington Ave., Mt. Oliver.
Johnson, Samuel H., 4025 Butler St.
Johnston, George C., Jenkins Arcade Bldg.
Johnston, James I., 201 South Craig St.
Johnston, Robert C., Springdale.
Jones, Clement R., Empire Building.
Jones, Herbert Leroy, 4819 Second Ave.
Jones, Wesley W., 903 Center Ave., Wilkinsburg.
Jones, William W., 940 Western Ave.
Katzenstein, M. Boyd, Jenkins Arcade Bldg.
Kaufman, Albert S., New Kensington (Westm. Co.).
Keebler, Charles Barton, McKees Rocks.
Keller, Nile P., 428 Fourth Ave.
Kellogg, Frederic S., 654 Herron Ave.
Kelly, J. Clarence, 133 Fifth Ave., McKeesport.
Kelso, John S., 740 California Ave., Avalon.
Kennedy, David D., 5712 Forbes St.
Kenworthy, Frank, 702 E. E. Trust Building.
Kern, Frank M., Dawson St., Oakland Station.
Kerr, Allen M., 5153 Penn Ave.
Kerr, J. Purd, 1908 Carson St.
Kerr, Thomas R., Oakmont.
Keyser, Charles F., 15 N. Duquesne Ave., Duquesne.
Kifer, Logan M., 537 Ringgold St., McKeesport.
King, Cyrus B., 1007 Western Ave., Allegheny.
King, Isaac K., 226 Brownsville Road, Mt. Oliver, Pittsburgh.
King, Richard A., 2517 Perrysville Ave.
King, S. Victor, Westinghouse Building.
Kirk, James A., Carrick.
Kirk, Thomas T., 4408 Liberty Ave.
Kirk, William H., Keenan Building.
Klotz, Oskar, 4720 Wallingford St.
Kneedler, G. Clyde, Jenkins Building.
Knorr, Lawrence R., 224 South Main St.
Knox, William F., 220 Fourth Ave., McKeesport.
Kocher, Quintin S., Gradatim.
Koenig, Adolph, 1111 Westinghouse Building.
Kohberger, Henry P., 405 Larimer Ave.
Kolski, John J., 840 Talbot Ave., Braddock.
Konantz, Orien F., 1667 Hampshire St., Quincy, Ill.
Korhnak, August J., 1026 Talbot Ave., Braddock.
Kraft, Alfred H., 47 South Eleventh St.
Krebs, Adolph, Jenkins Arcade Bldg.
Krieger, Geo. L., New Kensington (Westm. Co.).
Krepps, Allen L., Bessemer Building.
Kunkel, Howard W., 3701 Forbes St.
Kvatsak, Julius Joseph, 31 McClure Ave.
Lamb, Wah Jean C., Homestead.
Lamon, Goldson T., New Kensington (West. Co.).
Landis, Stephen S., 130 West Grant St., Duquesne.
Lange, J. Chris, 158 Bellefield Ave.
Langfitt, William S., Jenkins Arcade Bldg.
Langham, William H., 811 West St., Homestead.
Larimore, Fred Campbell, 710 California Ave., Avalon.
Lasday, Louis, Second and Flowers Aves.
Lauer, Cyril F., 4509 Butler St.
Lauffer, Chas. A., 521 Franklin Ave., Wilkinsburg.
Laughlin, John P., 131 North Highland Ave.
Laurent, F. Victor, Jenkins Arcade Building.
Lear, Isaac N., Birdville.
Lebeau, Samuel S., 1520 Center Ave.
Leffler, William H., 217 Eleventh Ave., McKeesport.
Lehner, William H., 1904 Carson St.
Leibold, George, 169 Iten St., N.S.
Leininger, Charles P., Jenkins Arcade Bldg.
Lemmer, J. Conrad, 324 South Ave., Wilkinsburg.
Lewin, Adolph L., 3703 Penn Ave.
Lewis, Edward C., Verona.
Leydic, Clarence L., Tarentum.
Lichtenstein, Myer B., 1532 Center Ave.
Lichty, John A., 4634 Fifth Ave.
Lindeman, Charles E., 7135 Hamilton Ave.
Lindsay, Charles S., 3401 McClure Ave.
Lindsay, James A., 622 Jenkins Building.
Linn, J. George, Highland Building.
Lippincott, J. Aubrey, Jenkins Building.
Litchfield, Lawrence, 5431 Fifth Ave.
Logan, Edward P., 1111 Arch St., Allegheny.
Long, James McMaster, 5532 Baywood St.
Love, James H., 622 Front St., Verona.
Lowrie, Walter Jas., 714 Braddock Ave., Braddock.
Lowrie, Robert N., 647 Fourth St., Braddock.
Ludwig, David B., Pitcairn.
Lurting, Clarence W., 1707 Fremont St.
Lutz, Carl L., 637 California Ave., Avalon.
Lyon, Alvin K., 413 North Ave., Millvale.
Lyon, Samuel E., 5482 Penn Ave.
McAboy, C. Bradford, 7136 Hamilton Ave.
McAdams, Edward C., 503 Brushton Ave.
McAdams, Robert J., 4818 Liberty Ave.
McBride, John L., 172 Center Ave., Emsworth.
McCague, Edward J., 100 Tennyson Ave.
McCandless, J. Guy, 5436 Center Ave.
McCann, John B., 811 Wylie Ave.
McCarrell, James R., 1115 Bidwell St., Allegheny.
McCausland, Wm. S., 5435 Stanton Ave., E. E.
McCleary, William W., Bellevue.
McClure, James D., 436 Rebecca Ave., Wilkinsburg.
McClymonds, Horace S., Wilkinsburg.
McComb, Samuel Forbes, Tarentum.
McCombs, Willison H., 1603 Carson St.
McConnell, Thos. E., Parnassus (Westm. Co.).
McCorkle, Wm. P., 653 Sherwood St., Sheridanville.
McCormick, Earl V., Grant St., Munhall.
McCormick, John C., 2224 Shiloh St.
McCracken, William, 209 South St. Clair St.
McCready, E. Bosworth, 909 Keenan Bldg.
McCready, Frank L., Sewickley.
McCready, J. Homer, 816 Empire Building.
McCready, James M., Sewickley.
McCready, Joseph A., 5482 Penn Ave.
McCready, Robert J., 909 Keenan Building.
McCulloch, William P., Cheswick.
McCune, Caleb, 802 Fifth Ave., McKeesport.
McCune, Charles E., East Springfield (Erie Co.).
McCune, David P., 519 Walnut St., McKeesport.
McCurdy, Stewart L., 8103 Jenkins Arcade Bldg.
McFarland, Wm. W., S. Highland Ave. and Baum St.
McGarvey, Samuel Curtis, Bridgeville.
McGeagh, Albert C., 134 South Negley Ave.
McGeary, William J., R.D. 1, Sharpsburg.
McGrew, Finley R., 101 Main St., Carnegie.
McGuire, Hugh E., Pittsburgh Life Building.
McKee, George J., Westinghouse Building.
McKee, Joseph H., 317 Main Ave., Carnegie.
McKelvy, James P., 519 North Highland Ave.
McKenna, William B., 918 Westinghouse Building.
McKennan, Moore S., 402 Atwood St.
McKennan, Thomas M. T., Jenkins Arcade Bldg.
McKibben, Alpheus, 1126 Highland Building.
McKibben, Samuel H., 1103 E. E. Trust Bldg.
McKinnon, Charles L., McKees Rocks.
McLallen, James I., 801 Wood St., Wilkinsburg.
McLenahan, Thomas M., Greenfield Ave.
McMaster, Gilbert C., 1903 Baltimore Ave.
McNaugher, Samuel N., Perrysville Ave., Allegheny.
McNeely, John F., Munhall.
McNeil, George W., 231 Frankstown Ave.
McQuaid, Joseph R., Leetsdale.
Mabon, John S., Empire Building.
Macdonald, Clarence P., 123 Beltzhoover Ave.
Macfarlane, James W., Westinghouse Bldg.
MacLachlan, Archibald A., Empire Building.
Mackrell, John S., 3944 Liberty Ave.
Madden, Francis J., 35 Grant St., Duquesne.
Mallison, Elizabeth C., 536 Fifth Ave., McKeesport.

Marcus, Samuel J., 1641 Fifth Ave.
Marick, Simon W., 1610 Center Ave.
Markel, James Clyde, 918 Westinghouse Bldg.
Marks, Orrie Lester, 542 Brookline Blvd.
Marren, Patrick J., 713 Arch St., Allegheny.
Marshall, Calvin C., 439 Jucunda St., Knoxville.
Marshall, Caroline S., 7045 Hamilton Ave.
Marshall, Watson, Diamond Bank Bldg.
Marshall, William N., Aspinwall.
Martin, Elizabeth Leiper, 422 Frederick Ave., Sewickley.
Martin, David B. W., 2 Broadway.
Martin, George, E., Duquesne.
Martin, W. Walton, Main St. and Penn Ave.
Matheny, A. Ralston, 7032 Hamilton Ave.
Mathewson, Franklin W., Oakdale.
Mattox, Edgar E., 1323 Fifth Ave.
Maxwell, W. Clark, 708 Highland Building.
Mayer, Edward E., Keenan Building.
Mayer, William H., 212 Charles St.
Meanor, Harold Henderson, Coraopolis.
Mechling, Curtis Campbell, Jenkins Arcade Bldg.
Mercur, Wm. H., Fifth Ave. and St. James St.
Meredith, Evan William, Highland Building.
Metzgar, Daniel A., 600 Braddock Ave., Braddock.
Metzger, George, 1007 Chestnut St., Allegheny.
Miller, Franklin B., Fulton Building.
Miller, Frank H., 814 Lincoln Ave.
Miller, Harold A., 219 Sixth St.
Miller, J. M., R.D., Hickory (Washington Co.).
Miller, James A., Braddock.
Miller, Laird O., 104 North Ave., E.
Miller, Oliver L., 104 North Ave., E.
Miller, Robert T., Jr., 1226 Murray Hill Ave.
Miller, Thomas A., 59 Rogers Ave., N.
Miller, William T., 314 Sixth St., McKeesport.
Milligan, John D., 345 Fourth Ave.
Milligan, Robert, Westinghouse Building.
Milligan, Samuel C., Jenkins Bldg.
Mills, S. Roy, 834 Braddock Ave., Braddock.
Mills, Wm. W., 4th and Kennedy Sts., Duquesne.
Mitchell, Atlee D., 4125 Main St.
Mitchell, Lewis T., Aspinwall.
Mohan, John F., 1600 Beaver St.
Montgomery, Ellis S., Jenkins Building.
Montgomery, W. Harry, Wall and Second Sts., Pitcairn.
Morris, Alanson F. B., 6901 Hamilton Ave.
Morrow, H. Wilson, Swissvale.
Moyer, Ray P., St. Francis Hospital.
Mullin, C. Elmer, Cambridge Springs (Craw. Co.).
Munford, John R., 4922 Penn Ave.
Murdoch, J. Floyd, Bessemer Building.
Murdock, Jas. H., Ban and Kratzen Sts., Crafton.
Murphy, Arthur Irwin, 209 Millvale Ave.
Murray, Robert J., 42 Broad St., Sewickley.
Nason, F. Thoburn, Cor. Dennison and Darlington Rd.
Naylor, Mary A., 5480 Penn Ave.
Neeley, Elmer E., 1302 Pennsylvania Ave., Allegheny.
Neely, Frank, 3909 Perrysville Ave., Allegheny.
Neff, Edward L., 920 Park Building.
Nelan, Thomas G., 6223 Penn Ave.
Nelson, Christian, 1231 Woodland Ave.
Nettleton, DeWitt B., Sewickley.
Nicholls, J. Calvin, 548 Braddock Ave., Braddock.
Nowry, Samuel E., 405 Annie St., Wilmerding.
O'Brien, Michael E., 2808 Sarah St.
O'Brien, William D., Hazelwood Ave.
O'Hagan, Walter L., 2702 Pioneer St.
Ohail, Joseph C., 412 W. North Ave., Allegheny.
Ohlman, Isaac L., 8122 Jenkins Arcade Bldg.
Opipari, Achilli U., 31 Chatham St.
Orbin, Walter B., 5210 Harriett St.
Ord, Edward Y., West Elizabeth.
Orr, Charles A., Crafton.
Orris, Charles S., Tarentum.
Osterloh, Chas. T., 116 E. North Ave., Allegheny.
Oyer, Harry W., Jenkins Arcade Bldg.
Palmer, Chauncey L., Washington Rd., Mt. Lebanon.
Parkin, E. Harris, Freeport St., New Kensington (Westmoreland Co.).
Patterson, Ellen James, Westinghouse Bldg.
Patterson, Harry B., Highland Building.
Perkins, David M., 516 Federal St.
Pershing, Frank S., 768 Penn Ave., Wilkinsburg.
Pettit, Albert, Keenan Building.
Phillips, Jacob W., 2108 Center Ave.
Phillips, John S., 614 Chestnut St., Allegheny.
Phillips, William T., Library.
Pierce, Amos M., West Elizabeth.
Pierce, Glenn McK., 3408 Versailles Ave., McKeesport.
Piper, Elmer N., New Kensington (Westm. Co.).
Polk, Oscar I., 874 Braddock Ave., Braddock.
Pool, Stewart N., 7000 Penn Ave.
Potts, James A., 15 Shiloh St.
Price, Albert D., 127 Hazelwood Ave.
Price, Henry T., Westinghouse Building.
Proescher, Frederick, Vanadium Bldg., Oakland Sta.
Purman, John, 8th and West Sts., Homestead.
Pyle, William T., 7479 McClure Ave., Swissvale.
Radin, Samuel P., Paulson Ave.
Rafferty, Donald George, 4700 Fifth Ave.
Rall, George W., Liberty Bank Building.
Ralston, B. Stewart, Neville and Center Sts.
Ramsey, Harvey Edwin, 3715 California Ave.
Rankin, Charles A., 1016 Walnut St., McKeesport.
Ransom, Frederick P., 1001 Western Ave., N.S.
Rasin, Robert C., 6111 Stanton Ave.
Rauch, Harvey M., 738 Warrington Ave.
Ray, William B., Glenshaw.
Read, John, 530 Fifth Ave., McKeesport.
Redmond, Maurice S., Crafton Station.
Rectenwald, John J., 132 Southern Ave., Mt. Oliver, Pittsburgh.
Reed, John C., 39 Duquesne Ave., Duquesne.
Reed, John O., Crafton.
Reif, Charles E., 616 Chestnut St., Allegheny.
Reiter, David, 613 Eighth Ave., Homestead.
Rhodes, Frederick A., 5119-5120 Jenkins Arcade Bldg.
Ribetti, Gaetano T., 66 Washington St.
Rickenbach, John F., Jenkins Arcade Bldg.
Ricketts, John G., 199 Steuben St., W.E.
Riethmuller, Albert Herman, 425 Grant Ave., Millvale.
Rigg, John E., 820 Wood St., Wilkinsburg.
Riggs, Elliott S., 38 West Prospect Ave., Washington (Washington Co.).
Rimer, Frank H., Municipal Hospital.
Ritchey, Elmer C., 214 Charles St., Mt. Oliver, Pittsburgh.
Ritchey, John B., 360 N. Lake Ave., Pasadena, Cal.
Ritchie, M. Delmar, Empire Building.
Rittenhouse, Harry H., Federal.
Robertson, John L., 1450 Columbus Ave.
Robinson, James W., 3600 Fifth Ave.
Robinson, Ralph V., 8087 Jenkins Arcade Bldg.
Robinson, Wilton H., 6206 Penn Ave.
Rock, Norbet F., 2348 California Ave., N.S.
Rodgers, William H., 1421 Lincoln Ave.
Roose, Arthur E., 711 Linden Ave., East Pittsburgh.
Rosenberg, Nicholas L., Jenkins Arcade Bldg.
Rosenbloom, Jacob, 5737 Forbes St.
Ross, William F., New Kensington (Westm. Co.).
Ruben, Jacob A., 1612 Center Ave.
Rudolph, Franklin W., 1907 Worrell St.
Rugh, John B., 430 Second St., Pitcairn.
Russell, John McD., 5418 Penn Ave.
Sable, Daniel E., 203 Nixon Building.
Sadowski, Leo, 2625 Penn Ave.
Sahm, Wm. K. T., Room 124, Union Station.
Sandblad, Andrew G., 728 Sixteenth St., McKeesport.
Sandels, Christopher C., Westinghouse Bldg.
Sands, Robert M., 4300 Butler St.
Sanes, K. Isadore, Jenkins Building.
Schaefer, Chas. N., 1140 Brownsville Rd., Carrick.
Schatzman, Edward P., 718 First St., Allegheny.
Scheffer, Carl J., 409 East North Ave.

Schildecker, Charles B., Park Building.
Schill, Joseph J., 2709 Butler St.
Schlanger, Frederick A., 5171 Butler St.
Schleiter, Howard G., 5420 Stanton Ave.
Schlotbom, Max G., 2710 Penn Ave.
Schmid, Henri, Coraopolis.
Schoyer, Geo. Shires, Highland Bldg., E.Liberty Sta.
Schrack, Frank M., 2417 Carson St.
Schumaker, Milton D., Tarentum.
Schwartz, Loraine L., 905 Keenan Building.
Scooley, A. Wiles, Braddock.
Scott, Joel F., Wilson.
Scott, Zaccheus R., Dravosburg.
Seegman, Simon, Jenkins Arcade Building.
Seipel, John H., 3406 Fifth Ave.
Seville, David Walter, 193 Lincoln Ave., Bellevue.
Shaffer, David H., Elizabeth.
Shaffer, P. T. Barnum, Elizabeth.
Shallcross, William G., Highland Building.
Shaw, Henry A., 2414 Carson St.
Shaw, William C., 909 Wylie Ave.
Shepard, Jackson B., 6449 Frankstown Ave.
Sherman, William O., Carnegie Building.
Sherrill, Alvan W., 5506 Ellsworth Ave.
Shillito, Geo. M., 810 Sandusky St., Allegheny.
Shillito, Nicholas G. L., Jenkins Arcade Bldg.
Shirey, Charles W., E. E. Trust Bldg.
Sigal, Harry M., 2139 Wylie Ave.
Sigman, Alfred S., Washington St., Bellevue.
Silver, David, Bryant and Farragut Sts.
Silvey, John H., 1622 Main St., Sharpsburg.
Simon, David L., 1334 Fifth Ave.
Simonton, Thomas G., 5412 Ellsworth Ave.
Simpson, Frank F., Jenkins Arcade Building.
Simpson, John Reid, Westinghouse Building.
Simpson, Sumner C., 350 South Highland Ave.
Sloan, Edgar H., 7435 Church Ave., Ben Avon.
Smith, Charles H., Arnold (Westmoreland Co.).
Smith, H. MacVicker, 401 Charles St., Mt. Oliver.
Smith, Joseph B., 828 Braddock Ave., Braddock.
Smith, La Monier, 3102 Landis St.
Smith, Lewis W., 6024 Station St.
Smith, R. Penn, 5431 Fifth Ave.
Smith, Stanley S., Jenkins Building.
Snedden, Alex. R., Boston.
Snitzer, Henry M., 1543 Center Ave.
Snyder, Frank G., 226 N. Main St., Sharpsburg.
Snyder, Marchand, 261 McCargo St., New Kensington (Westmoreland Co.).
Snyder, William J. K., Avalon.
Soffel, August, 23 Shiloh St.
Sohn, Charles, 4802 Liberty Ave.
Speer, Alexander M., 4900 Center Ave.
Speer, Harvey B., R.D. 3, Coraopolis.
Spiro, Marcus, 101 Taggart St.
Stahlman, Thomas M., 1111 Westinghouse Bldg.
Stanton, Anna M., 1412 Fifth Ave.
Stanton, James N., 355 Atwood St.
Staufft, Orson T., 1438 Columbus Ave.
Steele, Robert L., 606 Locust St., McKeesport.
Steffler, Samuel S., 260 S. Mathilda St.
Steffy, John L., 111 Brookline Blvd.
Stein, Carl H., 340 Southern Ave.
Steinmetz, Olive B., 8th and Ann Sts., Homestead.
Stevenson, Alex. M., Jenkins Arcade Bldg.
Stevenson, Ellerslie W., Jenkins Arcade Bldg.
Stevenson, James Wylie, McKeesport.
Stewart, Acheson, 905 Keenan Building.
Stewart, J. Boyd D., Wilson.
Stewart, Robert W., 4715 Fifth Ave.
Stewart, Wylie J., 814 Fourth Ave., Coraopolis.
Stieren, Edward, Westinghouse Building.
Stimson, George W., Jenkins Arcade Bldg.
Stone, William L., 5115 Jenkins Arcade Building.
Stoneman, Madison U., 101 Clarendon Ave., Crafton.
Stotler, Fulton R., 611 Penn Ave., Wilkinsburg.
Storer, Frank M., 821 Wood St., Wilkinsburg.
Stover, Miles E., 1024 Rebecca St., Allegheny.
Straessley, Clarence M., 621 East Parkway.
Straessley, Francis X., 621 Washington St., N.S.
Strickland, George W., 6266 Frankstown Ave.
Sturm, Samuel A., 5118 Jenkins Building.
Stybr, Charles J., 865 Lockhart St.
Stybr, Joseph, Bessemer Building.
Sunseri, Francisco, 800 Webster Ave.
Sunstein, Noah, 209½ Locust St., McKeesport.
Sutton, Edward Lincoln, Lincoln Ave., Bellevue.
Swanton, Robert V., 3502 Penn Ave.
Taylor, Edytha E., 11 Crafton Ave., Crafton.
Taylor, Martin C., 415 Warrington Ave.
Taylor, Robert L., 4736 Friendship Ave.
Terheyden, William A., 5000 Liberty Ave.
Thompson, Elmer J., 1300 Pennsylvania Ave.
Thompson, J. Calvin, 503 Union Ave., Allegheny.
Thompson, Marshall M., Pitcairn.
Thorne, John M., 3603 Fifth Ave.
Thunhurst, Wilford L., 1112 Swissvale Ave., Wilkinsburg.
Titus, Paul, 5431 Fifth Ave.
Todd, Frank L., 804 Sherman Ave., Allegheny.
Tomlinson, William, Turtle Creek.
Torrens,Adelbert E., 507 Perrysville Ave.,West View.
Trevaskis, Abraham L., Turtle Creek.
Tufts, Stewart W., Highland Building.
Turfley, George G., 1854 Center Ave.
Turnbull, Thomas, Jr., 835 Western Ave., Allegheny.
Turner, Hunter H., Jenkins Bldg.
Ungerman, Frank G., 409 Locust St., McKeesport.
Updegraff, Harry C., 2200 Brownsville Rd., Mt. Oliver, Pittsburgh.
Utley, Frederick B., 1126 Highland Building.
VanHorne, Thomas C., 310 Frankstown Ave.
VanKirk, Herbert S., 209 Sixth Ave., McKeesport.
VanKirk, Theophilus R., McKeesport.
Vates, Charles W., 2851 Bedford Ave.
Vaught, Harry C., 1305 Middle St., Sharpsburg.
Vaux, Carey J., 526 Larimer Ave.
Vaux, David William, 4300 Butler St.
Vaux, George H., 2163 Center Ave.
Vincent, James R., Highland Building.
Wade, Francis H., Wadehurst, Cambridge, Mass.
Wagener, Carl K., 312 Hutchinson Ave., Swissvale.
Wagner, Albert A., 812 Cedar Ave.
Waldie, Edith T., Westinghouse Building.
Walker, Robert L., Carnegie.
Walker, William K., Westinghouse Building.
Wallace, James O., 7008 Jenkins Arcade Building.
Wallace, William C., Ingram.
Wallis, Alfred W., 4807 Second Ave.
Walls, E. Slifer, 5414 Penn Ave.
Walter, Paul H., 229 Amber St.
Walters, DeForest E., 446 Atlantic Ave., McKeesport.
Walters, John, 316 Beaver St., Sewickley.
Walz, Frank J., Highland Bldg.
Watson, Charles M., 516 Federal St.
Weamer, John A., 411 Third Ave., Tarentum.
Wechsler, Benjamin B., 4943 Center Ave.
Weinberg, Max H., 2025 Center Ave.
Weill, Nathan J., Jenkins Arcade Building.
Weimer, Edgar S., 4614 Fifth Ave.
Weiss, Edward A., Jenkins Building.
Weisser, Edward A., Empire Building.
Welch, John C., Bellevue.
Werder, Xavier O., Jenkins Building.
Wertheimer, Herbert G., 1218 Westinghouse Bldg.
Wesley, William H., 208 Liberty Bank Bldg.
Wessels, John L., 711 Sandusky St., Allegheny.
Westervelt, Henry C., 6101 Penn Ave.
Whitcraft, James H., 804 Wood St., Wilkinsburg.
White, Sidney G., Box 166.
White, Wm. Chas., Bedford Ave. and Wandlass St.
Whitehead, Ira B., 1600 Baltimore Ave.
Wholey, Cornelius C., 4616 Bayard St.
Wible, Elmer E., Diamond Bank Building.

Wignall, Horace L. W., 821 Wylie Ave.
Willetts, Ernest W., 5101 Liberty Ave.
Willetts, Joseph E., Westinghouse Bldg.
Williams, John A., 206 W. Carson St.
Williamson, Joseph H., Bessemer Building.
Willock, John Scott, Beechdale Rd., Roland Park, Md.
Wilson, John M., S. Highland and Baum Aves.
Wilson, John V., West Elizabeth.
Wilson, Leyden F., 1000 Fifth Ave., New Kensington (Westmoreland Co.).
Winters, George R., 112 Cohasset St.
Witherspoon, Jas., 8126 Jenkins Arcade Bldg.
Woelfel, Herbert E., 340 Lincoln Ave., Bellevue.
Wohlwend, Frederick, Tarentum.
Wolf, Jacob, Jenkins Building.
Wood, Benjamin B., 2118 Fifth Ave.
Woodburn, Wilton A., 6744 Frankstown Ave.
Woods, Edward B., 715 N. Highland Ave.
Woods, Harry Robert, 600 Wylie Ave.
Woodward, Wm. M., 607 Fifth Ave., McKeesport.
Worrell, John W., 110 South Fairmount Ave.
Wright, George J., 117 Roup St.
Wycoff, William A., 7211 Frankstown Ave.
Yorty, Valentine J., 7300 Monticello St.
Zabarenko, Samuel, 2624 East Carson St.
Zeller, Albert T., McKeesport.
Zieg, George A., 908 Cedar Ave.
Ziegler, Charles E., Magee Memorial Hospital.
Zopfie, Mark, 1715 Fifth Ave.
Zugsmith, Edwin, 1014 Jenkins Arcade Bldg.
ZurHorst, Edward William, 1434 Fifth Ave.

ARMSTRONG COUNTY SOCIETY.

(Organized March 28, 1876.)

President...John M. Cooley, Kittanning.
V. Pres.....James A. Kelly, Whitesburg.
David I. Giarth, Ford City.
Sec. and Reporter....Jay B. F. Wyant, Kittanning.
Treasurer...Thomas M. Allison, Kittanning.
Censors.....L. Dent Allison, Kittanning.
George S. Morrow, Dayton.
Albert E. Bower, Ford City.
Charles A. Rogers, Freeport.
Joseph D. Orr, Leechburg.
Com. on Pub. Policy and Legislation..Thomas N. McKee, Kittanning.
Joseph D. Orr, Leechburg.
Samuel A. S. Jessop, Kittanning.
Memb. Com. Robert F. Tarr, Kittanning.
Thomas N. McKee, Kittanning.
Prog. Com..Charles J. Steim, Kittanning.
Frederick C. Monks, Kittanning.

Stated meetings at General Hospital, Kittanning, first Tuesday of each month. Election of officers in January.

MEMBERS (59).

Allison, James G., McGrann.
Allison, L. Dent., Kittanning.
Allison, Thomas M., Kittanning.
Ambler, Jesse E., Ford City.
Ambrose, Samuel E., Rural Valley.
Aye, Thomas L., Kelly Station.
Barton, Blain B., Adrian.
Bierer, J. William, Kittanning.
Bower, Albert E., Ford City.
Brown, J. M. E., R.D. 5, Kittanning.
Campbell, Jesse Wilbert, Elderton.
Campbell, Oren C., Ford City.
Cooley, John M., Kittanning.
Cramer, George E., Templeton.
Deemar, John T., Kittanning, R.D. 1.
Deemar, Rosco, Kittanning, R.D. 1.
Dunkle, John M., Worthington.
Fleming, Edward L., Dayton.
Giarth, David I., Ford City.
Griffith, Wilbert E., Iselin (Indiana Co.).
Heilman, Uriah O., Leechburg.
Henry, J. Thomas, Apollo.
Hileman, Frank W., Kittanning.
Hunter, Joseph I., Leechburg.
James, John A., Yatesboro.
Jessop, Charles J., Kittanning.
Jessop, Samuel A. S., Kittanning.
Kelly, James A., Whitesburg.
Kiser, John K., Kittanning.
Knight, George A., Kaylor.
Kroh, Laird F., Yatesboro.
Lawson, Eleanor J. Hetrick, Kittanning.
Lowery, John A., South Bend.
McCafferty, William H., Freeport.
McCreight, William S., Elderton.
McKee, Thomas N., Kittanning.
McLaughlin, Charles M., Freeport.
Mead, Ralph K., Sagamore.
Monks, Frederick C., Kittanning.
Morrow, George S., Dayton.
Newcome, Thomas H., Templeton.
Orr, Joseph D., Leechburg.
Powers, Henry K., New Kensington (Westm.Co.).
Quigley, James E., Adrian.
Ralston, Robert G., Cowansville.
Ralston, William J., Kittanning.
Riffer, David H., Leechburg.
Rogers, Charles A., Freeport.
Schnatterly, Lewis W., Freeport.
Skilton, Avery W., Furnace Run.
Steim, Charles J., Kittanning.
Steim, Joseph M., Kittanning.
Stockdale, Thomas F., Rural Valley.
Stone, Henry B., Kittanning.
Tarr, Robert F., Kittanning.
Thomas, David O., New Kensington (Westm. Co.).
Townsend, A. Howard, Apollo.
Welsh, Howard M., Leechburg.
Wyant, Jay B. F., Kittanning.

BEAVER COUNTY SOCIETY.

(Organized November 23, 1855.)

President...Fred B. Wilson, Beaver.
V. Pres.....Walter C. Arthur, Ambridge.
James W. McLaughlin, Beaver Falls.
Sec. and Treasurer...Boyd B. Snodgrass, Rochester.
Reporter....Margaret I. Cornelius, Beaver.
Censors.....John J. Allen, Monaca, 1 yr.
Andrew B. Cloak, Freedom, 2 yrs.
Guy S. Shugert, Rochester, 3 yrs.
Com. on Pub. Policy and Legislation..Theodore P. Simpson, Beaver Falls.
John J. Wickham, Rochester.

Stated meetings held in the Eagles Lodge room, third floor, Butler and Jackson Building, Rochester, on the second Thursday of each month at 3:30 P.M. Election of officers in January.

MEMBERS (53).

Ague, John B., Beaver Falls.
Allen, John J., Monaca.
Arthur, Walter C., Ambridge.
Beitsch, William F., New Brighton.
Bernhardy, Harry W., Rochester.
Boal, G. Fay, Freedom.
Boal, George Y., Baden.
Boyd, George J., Beaver Falls.
Burns, Emmett S., Beaver Falls.
Campbell, Ernest W., Midland.
Cloak, Andrew B., Freedom.
Cornelius, Margaret I., Beaver.
Elliott, Washington F., Beaver Falls.

Fish, James C., Beaver Falls.
Forcey, Charles B., Ambridge.
Gilliland, J. Frank, Beaver Falls.
Handmacher, Benjamin B., Beaver Falls.
Heinrich, Howard H., Rochester.
Hensell, Robert S., Midland.
Herriott, Walter H., Freedom.
Jones, Harry B., Woodlawn.
Langfitt, William J., 3042 Preble Ave., Pittsburgh (Allegheny Co.).
Louthan, James S., Beaver Falls.
McCandless, Milton L., Rochester.
McCaskey, Francis H., Freedom.
McCormick, George L., Beaver Falls.
McGogney, Charles B., Midland.
McLaughlin, James W., Beaver Falls.
McKinley, Andrew S., Monaca.
Mead, Harry B., New Brighton.
Meanor, William C., Beaver.
Mellott, Albert N., Ambridge.
Miller, John L., Aliquippa.
Moore, Harry E., Ambridge.
Nye, Hiram W., Enon Valley (Lawrence Co.).
Painter, Bert C., New Brighton.
Patterson, Robert M., Beaver Falls.
Peirsol, Scudder H., Jr., Rochester.
Rose, Walter A., Rochester.
Sawyer, Benjamin C., Darlington.
Scroggs, James, Beaver.
Shugert, Guy S., Rochester.
Simpson, Theodore P., Beaver Falls.
Snodgrass, Boyd B., Rochester.
Snodgrass, Bruce H., Beaver Falls.
Stevens, John A., Woodlawn.
Stevenson, John D., Aliquippa.
Strouss, Ulysses S., Beaver.
Sturgeon, Samuel D., New Galilee.
Taggart, Kate M., Beaver Falls.
Wickham, John J., Rochester.
Wilson, Fred B., Beaver.
Wilson, Jefferson H., Beaver.

BEDFORD COUNTY SOCIETY.

(Organized July 29, 1904.)

President...Paul Eaton, 5712 Forbes St., Pittsburgh.
V. Pres.....Abram M. Miller, Hyndman.
A. Hank Evans, Saxton.
Secretary...Walter F. Enfield, Bedford.
Reporter....C. Brumbaugh, 916 Graham Ave., Windber.
Treasurer...Edmund L. Smith, Schellburg.
Censors.....M. V. Brant, Stoyestown, R.D. 2.
Americus Enfield, Bedford.
William P. S. Henry, Everett.
Com. on Pub. Policy and Legislation..Walter de la M. Hill, Everett.
William C. Miller, State Health Dept., Harrisburg.
Benjamin F. Hunt, Clearville.

Stated meetings bimonthly in Bedford or in other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (23).

Ayres, Wilmot, Bedford.
Brant, Maurice Victor, Stoyestown, R. D. 2 (Som. Co.).
Brumbaugh, Clarence, 916 Graham Ave., Windber (Somerset Co.).
Campbell, Frank S., Hopewell.
Eaton, Paul, 5712 Forbes St., Pittsburgh (Alle. Co.).
Enfield, Americus, Bedford.
Enfield, Walter F., Bedford.
Evans, A. Hank, Saxton.
Fawcett, William E., Rainsburg.
Gensimore, Charles W., Bedford.
Hanks, Jason G., Everett
Henry, William P. S., Everett.
Hill, Walter de la M., Everett.
Horne, H. Taylor, New Paris.
Hunt, Benjamin F., Clearville.
Lindsey, James Washington, Imler.
Miller, Abram M., Hyndman.
Miller, William C., State Health Dept., Harrisburg (Dauphin Co.).
Nycum, William E., Everett.
Price, James F., Six Mile Run.
Shimer, Harry, Alum Bank.
Shoenthal, Harry L., New Paris.
Smith, Edmund L., Schellburg.

BERKS COUNTY SOCIETY.

(Organized 1824.)

(Reading is the post office when street address only is given.)

President...John S. Borneman, Boyertown.
V. Pres.....John W. Kauffman, 814 N. Eleventh St.
H. Philemon Brunner, 122 Oley St.
Secretary...H. Philemon Brunner, 122 Oley St.
Cor. Sec....R. A. Harding, 209 W. Greenwich St.
Treasurer...Howard U. Miller, Mt. Penn, Reading.
Librarian...Wm. S. Bertolet, 233 N. Sixth St.
Reporter....Clara Shetter-Keiser, 36 N. 10th St.
Curator.....H. F. Rentschler, 228 N. Sixth St.
Censors.....Daniel Longaker, 344 N. Fifth St.
Israel Cleaver, 223 S. Fifth St.
I. H. Hartman, 237 N. Fifth St.
Trustees....Charles W. Bachman, 221 N. Sixth St.
S. Banks Taylor, 140 Oley St.
I. H. Hartman, 237 N. Fifth St.
Harry F. Rentschler, 228 N. Sixth St.
George W. Kehl, 418 N. Tenth St.
Com. on Pub. Policy and Legislation..Charles W. Bachman, 221 N. Sixth St.
Israel Cleaver, 223 S. Fifth St.
Charles G. Loose, 120 N. Fifth St.

Stated meetings at Medical Hall, Reading, the second Tuesday of each month at 3 P.M. Election of officers in December.

MEMBERS (111).

Alexander, Robert M., Wernersville.
Allen, H. Melvin, 422 Walnut St.
Ammarell, Winfield H., Birdsboro.
Bachman, Charles W., 221 North Sixth St.
Bagenstose, Harry W., West Reading.
Bankes, Claude W., 212 North Sixth St.
Bauscher, Abner H., Temple.
Becker, John N., 332 North Ninth St.
Bertolet, John M., 1333 Perkiomen Ave.
Bertolet, Walter M., 1713 Center Ave.
Bertolet, William S., 233 North Sixth St.
Bertolette, Daniel N., 127 South Sixth St.
Borneman, John S., Boyertown.
Bower, John L., Broad Street Station, P. R. R., Philadelphia (Philadelphia Co.).
Brunner, H. Philemon, 122 Oley St.
Bucher, Hiester, 142 South Fifth St.
Burkholder, Samuel G., 613 Walnut St.
Cleaver, Israel, 223 South Fifth St.
Colletti, Ferdinando, 15 N. Fourth St.
Deibert, George S., Athol.
DeLong, Eugene R., Geiger's Mills.
Dotterrer, Charles B., Boyertown.
Dries, Charles L., Eshbach.
Dunkelberger, Nathaniel Z., Kutztown.
Fahrenbach, George, Bernville.
Feick, John F., 643 North Ninth St.
Fisher, William E., 151 West Buttonwood St.
Frankhauser, Fremont W., 38 South Eighth St.
Gerhard, James R., 540 Center Ave.
Hain, Ira J., 1119 North Ninth St.

Harding, Ralph A., 209 West Greenwich St.
Hartman, Irvin H., 237 North Fifth St.
Hawman, Erle G., 113 North Fifth St.
Hengst, Milton A., Birdsboro.
Henry, Charles P., 846 Center Ave.
Hertzog, C. Frank, Oley.
Hetrich, George, Birdsboro.
High, Isaac B., Shillington.
Hill, Samuel S., Wernersville.
Hunsberger, William E., Maiden Creek.
Huyett, M. Luther, Shillington.
Kauffman, John W., 814 North Eleventh St.
Kehl, George W., 418 North Tenth St.
Kieffer, Elmer C., 900 North Fifth St.
Koch, Morris H., Lyons.
Krum, Octavia L., Wernersville.
Kurtz, Clarence M., 304 South Fifth St.
Kurtz, J. Ellis, 22 South Fifth St.
Kurtz, Samuel L., 412 South Fifth St.
Lechner, LeRoy Y., Bechtelsville.
LeFevre, Rufus E., 138 South Eighth St.
Leinbach, Howard Milton, 228 North Fifth St.
Lerch, Charles E., Wyomissing.
Levan, George K., 300 South Fifth St.
Light, Israel J. K., 350 North Sixth St.
Livingood, William W., Robesonia.
Longaker, Daniel, 344 North Fifth St.
Loose, Charles G., 120 North Fifth St.
Lytle, Frank P., Birdsboro.
Mattern, Fred L. R., Fleetwood.
Matternes, James G., Sinking Spring.
Meter, Edward G., 948 Penn St.
Miller, Howard U., Mt. Penn, Reading.
Morgan, David W., 327 West Oley St.
Muhlenberg, Hiester H., 323 North Fifth St.
Muhlenberg, William F., 34 South Fifth St.
Newcomet, Henry I., 48 N. Fourth St.
Newcomet, Isaac W., Stouchsburg.
Orff, John Henry, 1556 Mineral Spring Road.
Overholser, George W., 309 North Ninth St.
Potteiger, George F., Hamburg.
Potteiger, Jonathan B., Hamburg.
Quickel, Herbert L., Boyertown.
Reeser, Howard S., 111 South Fifth St.
Remsberg, Daniel E., Pa. R.R. Station.
Rentschler, Harry F., 228 North Sixth St.
Rhoads, Thomas J. B., Boyertown.
Rhode, Homer J., 220 North Sixth St.
Roland, Charles, 105 South Fifth St.
Rothrock, Addison M., 132 South Ninth St.
Runyeon, Frank G., 1390 Perkiomen Ave.
Saul, Henry W., Kutztown.
Schaeffer, Edwin D., 317 South Sixth St.
Schaeffer, Harry B., Shillington.
Schlappich, Charles E., Bernville.
Schlemm, Horace E., 46 South Fifth St.
Schmehl, Seymour T., 110 North Ninth St.
Seaman, John K., 325 A. N. Ninth St.
Shearer, Christopher H., 206 North Fifth St.
Shearer, James Y., Sinking Spring.
Shearer, Wayne L., 101 W. Greenwich St.
Shenk, George R., 116 South Ninth St.
Shetter-Keiser, Clara, 36 North Tenth St.
Shoemaker, Ira G., 19 South Ninth St.
Smith, Charles F., Topton.
Sondheim, Sidney J., 1044 North Tenth St.
Stamm, Allison A., Mohnton.
Taylor, S. Banks, 140 Oley St.
Thompson, Oan J., 233 N. Ninth St.
Tryon, Lewis R., Centerport.
Wagner, Jesse L., 152 North Sixth St.
Wagner, Levi F., 610 North Tenth St.
Wenger, LeRoy J., 1108 North Eleventh St.
Wenrich, George G., Wernersville.
Wenrich, John Adam, Wernersville.
Werley, Charles D., Topton.
Wheeler, Lucia Anna, Wernersville.
Womer, Frank, 216 North Sixth St.
Wickert, Victor W., 1009 Penn St.
Ziegler, John George, 340 South Third St.
Zook, Joseph Allen, Morgantown.

BLAIR COUNTY SOCIETY.

(Organized July 25, 1848.)

(Altoona is the post office when street address only is given.)

President...Samuel C. Smith, Hollidaysburg.
V. Pres.....Joseph U. Blose, 401 Howard Ave.
H. H. Brotherlin, Hollidaysburg.
Secretary...Charles F. McBurney, 710 Ninth St.
Cor. Sec.
and Rept....Arthur S. Brumbaugh, 1405 Tenth St.
Treasurer...Charles F. McBurney, 710 Ninth St.
Censors.....W. A. Nason, Roaring Spring, 1 yr.
J. E. Smith, 330 Fourth Ave., 2 yrs.
S. L. McCarthy, 1331 Eighth Ave., 3 yrs.
Com. on Pub.
Policy and
Legislation..H. H. Brotherlin, Hollidaysburg.
W. Albert Nason, Roaring Spring.
James E. Smith, 330 Fourth Ave.

Stated meetings held in University Clubhouse, Altoona, the fourth Tuesday of every month, except September, in which month meeting is held on third Thursday at 3 P.M.

MEMBERS (84).

Alleman, George E., 2310 Broad Ave.
Allen, David E., 1325 Eighth Ave.
Beck, William Frank, Altoona Trust Bldg.
Blair, Ada, 1307 Twelfth Ave.
Bliss, Gerald D., 310½ Howard Ave.
Bloomhardt, Fred H., 1907 Eighth Ave.
Blose, Joseph U., 401 Howard Ave.
Bonebreak, John S., Martinsburg.
Brotherlin, Henry H., Hollidaysburg.
Brubaker, John L., Juniata.
Brumbaugh, Arthur S., 1405 Tenth St.
Burket, Clair W., 523 Fourth St.
Burket, George W., Tyrone.
Confer, D. Clarence, Duncansville.
Crawford, James C., Cabazon, Cal.
Crawford, Luther Fleck, Tyrone.
Cunningham, Harry B., Juniata.
Davis, Daniel W., Six Mile Run (Bedford Co.).
Delaney, Charles Walter, 1320 Ninth St.
Eldon, Roswell T., 1624 Eleventh St.
Findley, Joseph D., 802 Twelfth St.
Ford, Frank A., 1107 Twelfth Ave.
Fox, Charles W., Roaring Spring.
Glasgow, David Fulkerson, Tyrone.
Glover, Samuel P., 1118 Twelfth Ave.
Haagen, David F., 817 Seventeenth St.
Haberacker, Eugene O., 2222 Seventh Ave.
Handwork, Andrew Jackson W., 1227 12th Ave.
Hillis, Robert J., N. W. Cor. 4th Ave. and 6th St., Juniata.
Hogue, Davis A., 922 Seventeenth St.
Hogue, John D., 1110 Twelfth St.
Howell, William H., 1123 Twelfth Ave.
Hull, Logan Erie, 1212 Twelfth St.
Ickes, George A., 2412 Broad Ave.
Irwin, Robert C., Hollidaysburg.
Jones, Henry O., 1107 Twelfth Ave.
Keagy, Frank, 401 Seventh Ave.
Kech, Augustus Sheridan, 1209 Sixteenth St.
Kephart, Thomas A. C., 308 Fourth St.
Kauffman, David, 1119 Twelfth Ave.
Levengood, Brooklyn B., Bellwood.
Long, Charles, Salemville (Bedford Co.).
Loudon, Edward W., 4001 Fifth Ave.
Lowrie, William L., Tyrone.

McBurney, Charles F., 710 Ninth St.
McCarthy, Harry, 1107 Twelfth Ave.
McCarthy, Samuel L., 1331 Eighth Ave.
McCarthy, S. Lloyd, Jr., 1331 Eighth Ave.
McKee, Lewis E., 1103 Thirteenth Ave.
Menninger, William H., Juniata.
Metzgar, Carl H., 1424 Twelfth Ave.
Miller, Edwin B., 1903 Seventh Ave.
Miller, Homer C., 1202 Sixteenth St.
Morrow, Thomas M., 941 Seventeenth St.
Morrow, William H., Bellwood.
Musser, Walter F., Tyrone.
Nason, John B., Tyrone.
Nason, W. Albert, Roaring Spring.
Neff, Elmer E., 813 Eighth Ave.
Noss, Charles W., 1118 Seventh Ave.
Nowell, Mary E., 1315 Sixth Ave.
Oburn, Albert S., 701 Seventh Ave.
Pershing, Paul Frederick, 1203 Seventh Ave.
Pownall, Howard W., Tyrone.
Reith, Emil, Central Trust Building.
Robison, Clair E., 930 Seventeenth St.
Shaffer, Orr H., 1216 Twelfth Ave.
Sheedy, John M., 1114 Fifteenth St.
Shoemaker, Frank R., Hollidaysburg.
Shultz, Charles Lytle, 508 Second St., Juniata.
Smith, James E., 330 Fourth Ave.
Smith, Samuel Calvin, Hollidaysburg.
Snyder, Claude Edwin, 830 Sixth Ave.
Sommer, Henry J.,Jr., Blair Co.Hosp.,Hollidaysburg.
Spanogle, Albert L., 1226 Seventh Ave.
Stayer, Andrew S., Nat. Soldiers Home, Togus, Me.
Stonebreaker, Samuel L., Tyrone.
Tate, George F., 1201-3 Thirteenth Ave.
Tobin, Thomas, Tyrone.
Vissel, Julius T., Roaring Spring.
Walton, Louis Stockton, 53 Central Trust Bldg.
Watson, James G., Juniata.
Whittaker, Ralph R., Williamsburg.
Wilson, Thomas T., Bellwood.

BRADFORD COUNTY SOCIETY.

(Organized September 20, 1849.)

President...C. Melvin Coon, Sayre.
V. Pres.....Howard C. Down, Wysox.
Alpheus E. Dann, Canton.
Sec. and
Reporter....Cyrus Lee Stevens, Athens.
Treasurer...Francis Chaffee, Towanda.
Librarian...C. Manville Pratt, Towanda.
Censors.....George H. B. Terry, Wyalusing, 3 yrs.
Perley N. Barker, Troy, 2 yrs.
C. Manville Pratt, Towanda, 1 yr.
Ex. Com....C. Melvin Coon, Sayre.
Cyrus Lee Stevens, Athens.
Charles M. Woodburn, Towanda.
Com. on Pub.
Policy and
Legislation..T. Ben Johnson, Jr., Towanda.
Cyrus Lee Stevens, Athens.
George H. B. Terry, Wyalusing.

Stated meetings on second Tuesday of each month at 1:30 P.M., in the Court House, Towanda, unless otherwise ordered. Election of officers in January.

MEMBERS (48).

Badger, Samuel W., Athens.
Ballard, Mahlon B., Troy.
Barker, Perley N., Troy.
Bevan, Daniel L., Leroy.
Boyer, George E., Troy.
Campbell, William R., East Smithfield.
Carpenter, Philo S., Troy.
Chaffee, Francis, Towanda.
Conklin, Gustavus, Orwell.
Coon, C. Melvin, Sayre.
Dann, Alpheus E., Canton.
Davison, Willis T., Canton.
Down, Howard C., Wysox.
Durga, Gideon W., LeRaysville.
Everitt, John E., Sayre.
Farr, Eri M., 301 Yellowstone Ave., Billings, Mont.
Glover, Henry A., Nichols, N. Y.
Gustin, Grant H., Sylvania.
Guthrie, Donald, Sayre.
Haines, Carlyle N., Sayre.
Haines, Charles A., Sayre.
Harshberger, W. Frank, New Albany.
Hawk, George W., Sayre.
Higgins, John M., Sayre.
Inslee, Fayette Lane, LeRaysville.
Johnson, Thomas B., Towanda.
Johnson, T. Ben, Jr., Towanda.
Kingsley, Harry O., Burlington.
Lee, John C., Herrickville.
Means, Charles S., Towanda.
Parks, Arthur Lloyd, Rome.
Parsons, James W., Canton.
Payne, Edward D., Towanda.
Phillips, John W., Troy.
Pratt, C. Manville, Towanda.
Pratt, Frank L., R.D. 55, Wellsburg, N. Y.
Reed, Charles, Towanda.
Rice, Frederick W., Sayre.
Rinebold, Nathan A., Athens.
Rockwell, Oscar H., Monroeton.
Schwartz, Philip H., Towanda.
Stevens, Cyrus Lee, Athens.
Sumner, Porter H., Camptown.
Terry, George H. B., Wyalusing.
Thompson, Ferdinand A., Towanda, R.D. 4.
Tuttle, Homer, Sayre.
Weinberger, Nelson S., Sayre.
Woodburn, Charles M., Towanda.

BUCKS COUNTY SOCIETY.

(Organized June 14, 1848. Reorganized October 31, 1862.)

President...William S. Erdman, Buckingham.
V. Pres.....Samuel A. Leinbach, Quakertown.
Henry L. Bassett, Yardley.
Sec., Treas.
and Rept....Anthony F. Myers, Blooming Glen.
Censors.....Howard Pursell, Bristol.
George M. Grim, Ottsville.
Wm. R. Cooper, Point Pleasant.
Com. on Pub.
Policy and
Legislation..George M. Grim, Chairman, Ottsville.
William C. LeCompte, Bristol.
George A. Parker, Southampton.

Stated meetings at 12 M. the second Wednesday in February at Newtown; in May at Bristol; in August at Quakertown; in November at Doylestown. Election in November.

MEMBERS (81).

Abbott, Charles Shewell, Bristol.
Abbott, Joseph de Benneville, Bristol.
Althouse, Albert C., Dublin.
Bassett, Henry Linn, Yardley.
Biehn, Andrew C., Quakertown.
Brewer, George M., Plumsteadville.
Brown, Walter H., 1137 Mass. Ave., Brentford Hall, Cambridge, Mass.
Burkhardt, Charles N., Chalfont.
Carrell, John B., Hatboro (Montgomery Co.).
Carter, J. Morris, Eddington.
Cawley, James I., Springtown.
Collins, James, Bristol.
Cooper, William R., Point Pleasant.
Cope, F. Gurney, Upper Black Eddy.

Crewitt, John A., Newtown.
Cross, Sumner H., Jenkintown (Montg. Co.).
Dill, Mahlon B., Perkasie.
Erdman, William S., Buckingham.
Erdman, Wilson S., Quakertown.
Fell, John A., Doylestown.
Fleckenstine, Horace, Newportville.
Fretz, Alfred E., Sellersville.
Fretz, Oliver H., Quakertown.
Fretz, S. Edward, Box 15, Whitestone, L.I., N.Y.C.
Grim, George M., Ottsville.
Grim, Herman C., Cressman.
Groff, James E., Doylestown.
Groom, Evan J., Bristol.
Harper, James Wesley, Forest Grove.
Hellyer, Howard A., Penn's Park.
Heritage, Joseph B., Langhorne.
Huff, Irwin F., Sellersville.
Hunt, James Edgar, Salladasburg (Lycom. Co.).
Huntsman, Edwin S., Hulmeville.
Imhoff, Wm. H. M., Willow Grove (Montg. Co.).
Johnson, Erwin T., Hilltown.
Klenk, James M., Tullytown.
LeCompte, William C., Bristol.
Lehman, Frank, Bristol.
Leinbach, Samuel A., Quakertown.
Ley, Charles L., Wycombe.
Lovett, Henry, Langhorne.
McIlhatten, Samuel Patterson, Ivyland.
Magill, Roscoe C., Newhope.
Murphy, Felix A., Doylestown.
Myers, Anthony F., Blooming Glen.
Nonamaker, Noah S., Bedminster.
O'Connell, Austin, Bucksville.
Osborne, Richard H. G., Morrisville.
Ott, John J., Pleasant Valley.
Parker, George A., Southampton.
Parker, George A., Jr., Newtown.
Plymire, I. Swartz, Doylestown.
Pownall, Elmer E., Richboro.
Pursell, Howard, Bristol.
Rich, Edward Y., Marietta (Lancaster Co.).
Richards, James N., Fallsington.
Ridge, Samuel LeRoy, Langhorne.
Scott, J. Ernest, Newhope.
Smith, Charles B., Newtown.
Smith, Edwin L., Hatboro (Montgomery Co.).
Strouse, Otto H., Perkasie.
Swartzlander, Frank B., Doylestown.
Swartzlander, Joseph R., Doylestown.
Sweeney, John J., Doylestown.
Wagner, J. Frederick, Bristol.
Walter, Charles A., Glenside (Montgomery Co.).
Walter, Joseph B., Solebury.
Walter, J. Willis, Point Pleasant.
Walton, Levi S., Jenkintown (Montgomery Co.).
Wareham, Arthur, Morrisville.
Watson, Franklin, Willow Grove (Montgomery Co.).
Weaver, Milton E., South Perkasie.
Weierbach, John A., Quakertown.
Weisel, William F., Quakertown. R.D. 2.
Wetmore, Stephen S. P., Morrisville.
Wilkinson, William J., Sellersville.
Williams, Neri B., Perkasie.
Wilson, Abram S., Bristol.
Winder, Lawrence J., Audalusia.
Winder, William G., 1504 Spruce St., Philadelphia (Philadelphia Co.).

BUTLER COUNTY SOCIETY.

(Organized January 3, 1867.)

President...Harry P. St. Clair, Butler.
V. Pres.....Raymond A. Thompson, Butler.
Egbert T. Simpson, East Butler.
Sec. and Reporter....Mary P. Brooke, Butler.
Treasurer...M. Edward Headland, Butler.
Librarian...Elgie L. Wasson, Butler.
Censors.....Thomas M. Maxwell, Butler.
William B. Clark, Butler.
James L. Christie, Conoquenessing.
Robert J. Grossman, Butler.
John V. Cowden, Butler.
Com. on Pub. Policy and Legislation..J. Clinton Atwell, Butler.
Elgie L. Wasson, Butler.
Albert Holman, Butler.

Stated meetings in University Club Rooms, Butler, the second Tuesday in each month. Election of officers in January.

MEMBERS (61).

Atwell, J. Clinton, Butler.
Beatty, George M., Chicora.
Boyle, James C., Butler.
Brandberg, Guy A., 358 Center Ave., Butler.
Brooke, Mary P., Butler.
Campbell, Ephriam E., Butler.
Campbell, John S., 420 E. Clay St., Butler.
Campbell, Willard B., Harrisville.
Christie, James L., Conoquenessing.
Clark, William B., Butler.
Cowden, John V., Butler.
Daubenspeck, Chas. F., 226 N. Main St., Butler.
deLong, Francis E., West Sunbury, R.D. 50.
DeWolf, Willard L., Butler.
Doane, L. Leo, Butler.
Dombart, Nicholas A., Evans City.
Edmonds, Andrew J., Bruin.
Elrick, Robert B., Petrolia.
Fiedler, Daniel W., Harmony.
Greer, Robert B., Butler.
Grossman, Robert J., Butler.
Grossman, William J., Butler.
Hazlett, Leslie R., Box 643, Butler.
Headland, M. Edward, 216 Center Ave., Butler.
Heilman, Arthur M., Butler.
Hockenberry, Harvey D., West Sunbury.
Hockenberry, W. Rush, Slippery Rock.
Holman, Albert, 121 West Clay St., Butler.
Hughes, Eugene Martin, 223 S. Main St., Butler.
Hunter, Charles W., West Sunbury.
Ketterer, Clarence Henry, 348 S. Main St., Butler.
Lasher, Weston W., Saxonburg.
Lowry, Walter T., North Washington.
McCandless, Everett LeRoy, Renfrew.
McCandless, Dwight L., East Diamond St., Butler.
McClelland, Charles S., 131 E. Diamond St., Butler.
McClelland, James H., Argentine.
McConnell, Walter W., Harrisville.
McCullough, Thomas L., Mars.
Maxwell, Thomas McCullough, Butler.
Mershon, Edwin U. B., Saxonburg.
Minteer, Jas. Frank, 211 First St., Butler.
Neely, Henderson J., Butler.
Purvis, Joseph D., 140 E. Jefferson St., Butler.
Ramsey, Byron L., 129½ S. Main St., Butler.
Robb, Claude A., 129 S. Main St., Butler.
St. Clair, Harry P., 213 South Main St., Butler.
Scott, William McC., Renfrew.
Simpson, Egbert T., East Butler.
Straube, Arthur H., Chicora.
Thomas, Victor F., Evans City.
Thompson, James B., Prospect.
Thompson, Raymond A., Butler.
Walker, Ralph, Butler.
Wasson, Elgie L., Butler.
Whittaker, Arthur E., Zelienople.
Williams, Olin A., Butler.
Wilson, Harry M., Evans City.
Wilson, Harry R., Callery.
Young, Clinton M., Queens Junction.
Ziegler, Alfred Henry, Butler.

CAMBRIA COUNTY SOCIETY.

(Organized 1852. Reorganized 1868 and 1882.)

President...John B. McAneny, Johnstown.
V. Pres.....Robert C. Davis, Johnstown.
Frank U. Ferguson, Gallitzin.
Sec. and
Reporter....Harry J. Cartin, Johnstown.
Treasurer...Francis Schill, Johnstown.
Censors.....George Hay, Johnstown.
Francis Schill, Johnstown.
Robert C. Davis, Johnstown.
Com. on Pub.
Policy and
Legislation..George W. Wagoner, Johnstown.
Fremont C. Jones, Ebensburg.

Stated meetings every second Thursday at 3 P.M., at Johnstown. Officers elected in December and installed in January.

MEMBERS (98).

Akers, Andrew Franklin, Gallitzin.
Anderson, Guy R., Barnesboro.
Barker, Olin G. A., 804 Johnstown Trust Bldg., Johnstown.
Barnett, Geo. Watson, 435 Lincoln St., Johnstown.
Barr, John W., Nanty Glo.
Beatty, Arthur W., Colver.
Bennett, Harry J., Ebensburg.
Blair, Walter Allen, Patton.
Blaisdell, Irving C., Wilmore.
Bowers, Benjamin F., St. Benedict.
Boyer, Edwin C., 213 Market St., Johnstown.
Brallier, Stanley A. E., Conemaugh.
Brinham, Alfred W., Scalp Level.
Burkhart, Ephraim J., Johnstown.
Caldwell, John D., Ebensburg.
Cartin, Harry J., Johnstown.
Cleaver, Philip R., Johnstown Trust Bldg., Johnstown.
Davis, Robert C., 413 Locust St., Johnstown.
Davison, Seward R., Johnstown.
Dickinson, E. Pope, St. Michael.
Difenderfer, Herman G., Beaverdale.
Donlan, Francis A., South Fork.
Dunsmore, Albert E., Barnesboro.
Ealy, Edwin T., Barnesboro.
Ferguson, Frank U., Gallitzin.
Fichtner, Albon S., Johnstown.
Fichtner, Allan Ellsworth, First St., Conemaugh.
Fisher, Daniel E., Needmore (Fulton Co.).
Fitzgerald, Clyde A., South Fork.
Gurley, Lycurgus M., 406 Main St., Johnstown.
Hammer, Chas. M., 602 Central Ave., Johnstown.
Hannan, Charles E., Johnstown.
Harris, Clarence M., 604 Johnstown Trust Bldg., Johnstown.
Hay, George, Johnstown.
Hays, Charles Elliott, Johnstown.
Helfrick, T. Orlando, Spangler.
Helsel, William L., Scalp Level.
Hornick, Leo W., Johnstown.
Horowitz, Max, Johnstown.
Jefferson, James, Johnstown.
Johnston, William M., Emeigh.
Jones, Emlyn, Johnstown.
Jones, Fremont C., Ebensburg
Jones, Leighton Wherry, Johnstown.
Keiper, Jacob D., Johnstown.
Kessler, William C., Ehrenfeld.
Koontz, James S., Johnstown.
Kress, Frederick C., Ellis Bldg., Main St., Johnstown.
Kring, Sylvester S., Johnstown.
Leech, A. Wallace, Beaverdale.
Livingston, Frank J., Salix.
Longwell, Benton Elkins, Johnstown.
Lowman, John Bodine, Johnstown.
Lubken, William Oscar, Johnstown.
Lynch, James A., Cresson.
McAneny, John B., Johnstown.
McKinney, William Glenn, Cresson.
Matthews, William E., Johnstown.
Maucher, Joseph V, Carrolltown.
Mayer, Louis H., Johnstown.
Mendenhall, Thomas E., Johnstown.
Miller, Edward L., Johnstown.
Millhoff, Clarence B., Johnstown.
Mulvehill, Vincent J., Carrolltown.
Murray, John A., Patton.
Murray, Valesius A., Patton.
Nickel, Harry G., Johnstown.
Palmer, Robert M., Johnstown.
Pardoe, Edward, South Fork.
Penrod, Harry Hartzell, Johnstown.
Porch, George B,. Johnstown.
Porch, Latshaw Lynn, 221 Broad St., Johnstown.
Prideaux, William A., Expedit.
Pringle, William N., Johnstown.
Ray, Daniel Pattee, 906 First National Bank Bldg., Johnstown.
Raymond, Walter C., Lilly.
Rice, Daniel S., Hastings.
Rush, Calvin Cicero, Portage.
Sagerson, John Leo, Johnstown.
Sagerson, Robert J., 643 Locust St., Johnstown.
Salus, Henry W., 225 Market St., Johnstown.
Schill, Francis, Johnstown.
Schramm, Francis M. B., Johnstown.
Shank, Orlando J., Windber (Somerset Co.).
Sloan, Ira E., Johnstown.
Smith, Augustus Edwin, South Fork.
Smith, Elizabeth Cisney, South Fork.
Spicher, Clarence C., 566 Park Ave., Johnstown.
Statler, Frank B., Johnstown.
Stewart, Harry Myrrel, Johnstown Trust Bldg., Johnstown.
Taylor, J. Swan, Johnstown.
Tomb, Henson F., Johnstown.
Turnbull, William G., Cresson.
VanWert, John Irving, Patton.
Wagoner, George W., Johnstown.
Wood, James Folwell, Barnesboro.
Woodruff, John B., Johnstown.
Yearick, George I., Lilly.

CARBON COUNTY SOCIETY.

(Organized April 20, 1881.)

President...John E. Waaser, East Mauch Chunk.
V. Pres.....Charles T. Horn, Lehighton.
Harold E. Hersh, Palmerton.
Secretary...Calvin J. Balliet, Lehighton.
Treasurer...Clinton J. Kistler, Lehighton.
Reporter....James B. Tweedle, Weatherly.
Censors.....Charles T. Horn, Lehighton.
Louis W. Moyer, Mauch Chunk.
Wilson P. Long, Weatherly.
Com. on Pub.
Policy and
Legislation..Jacob G. Zern, Lehighton.
John W. Luther, Palmerton.

Stated meetings held at Mauch Chunk, the third Thursday of January, March, May, July, September and November. Place of meetings may be changed by vote of society. Election of officers in November for following year.

MEMBERS (35).

Armstrong, Alexander, White Haven (Luz. Co.).
Balliet, Calvin J., Lehighton.
Behler, Jacob H., Nesquehoning.
Buckley, Thomas Vincent, Lansford.
Clewell, William H., Summit Hill.
Davis, Alquin J., Peckville (Lackawanna Co.).
Dreibelbis, David F., Lehighton.
Druckenmiller, Stanley F., Lansford.

Eshleman, Edward F., Parryville.
Freyman, Ira E., Weatherly.
Gable, John C., Palmerton.
Haberman, Charles P., Weissport.
Henry, John K., Mauch Chunk.
Hersh, Harold E., Palmerton.
Hoffmeier, Howard T., Mauch Chunk.
Horn, Charles T., Lehighton.
Kingsbury, Oscar J., Nesquehoning.
Kistler, Clinton J., Lehighton.
Kistler, Edwin H., Lansford.
Kistler, Grant M., Lansford.
Kistler, Willoughby K., Lehighton.
Krebs, Stanley A., Palmerton.
Kutz, Wilson L., Weissport.
Long, Wilson P., Weatherly.
Luther, John W., Palmerton.
Moyer, Louis W., East Mauch Chunk.
Neumiller, Maurice H., Lansford.
Ruch, Charles F., Summit Hill.
Sittler, Albert M., Bowmanstown.
Sittler, Warren C., Lehighton, R.D. 1.
Trexler, Jacob A., Lehighton.
Tweedle, James B., Weatherly.
Waaser, John E., East Mauch Chunk.
Young, J. Harrington, Lansford.
Zern, Jacob G., Lehighton.

CENTER COUNTY SOCIETY.

(Organized April 4, 1876.)

President...David Dale, Bellefonte.
V. Pres.....P. H. Shelley, Pleasant Gap.
John A. Hardenbergh, Millheim.
Sec. and
Treasurer...Scott M. Huff, Milesburg.
Reporter....James L. Seibert, Bellefonte.
Censors.....Peter H. Dale, State College.
John V. Foster, State College.
Harvey S. Braucht, Spring Mills.
Com. on Pub.
Policy and
Legislation..Melvin J. Locke, Bellefonte.
David Dale, Bellefonte.
James L. Seibert, Bellefonte.

Stated meetings the second Wednesday of each month at 10 A.M. in the Court House, Bellefonte. Election of officers in January.

MEMBERS (28).

Allison, John R. G., Center Hall.
Braucht, Harvey S., Spring Mills.
Bright, John W., Rebersburg.
Brockerhoff, Joseph M., Bellefonte.
Coons, Samuel G., Stormstown.
Dale, David, Bellefonte.
Dale, Peter Hoffer, State College.
Dorworth, Edward Samuel, Bellefonte.
Foster, John V., State College.
Frank, George S., Millheim.
Glenn, Grover Cleveland, State College.
Glenn, William S., State College.
Hardenbergh, John A., Millheim.
Harris, Edward H., Snow Shoe.
Hayes, Robert G. H., Bellefonte.
Huff, Scott M., Milesburg.
Irwin, William U., Fleming.
Kidder, Lincoln E., Boalsburg.
Kurtz, Walter J., Howard.
Locke, Melvin J., Bellefonte.
McEntire, Oscar W., Howard.
Musser, C. Sumner, Aaronsburg.
Russell, Edward A., Fleming.
Seibert, James L., Bellefonte.
Shelley, Penrose Herr, Pleasant Gap.
Thompson, James A., Port Matilda.
Woods, George H., Pine Grove Mills.
Young, Robert J., Snow Shoe.

CHESTER COUNTY SOCIETY.

(Organized February 5, 1828.)

President...Thomas G. Aiken, Berwyn.
V. Pres.....Charles C. Bullock, Chatham.
Howard Y. Pennell, East Downingtown.
Sec. and
Treasurer...Joseph Scattergood, West Chester.
Reporter....D. E. Hutchison, East Downingtown.
Censors.....S. Horace Scott, Coatesville, 1 yr.
Chas. E. Woodward, West Chester, 2 yrs.
Edward Kerr, East Downingtown, 3 yrs.
Exec. Com..Thomas G. Aiken, Berwyn.
U. Grant Gifford, Avondale.
Joseph Scattergood, West Chester.
Prog. Com..Chas. E. Woodward, West Chester.
Henry Pleasants, Jr., West Chester.
William T. Sharpless, West Chester.

Stated meetings at 2:30 P.M. on the third Tuesday of January, May and September at West Chester; third Tuesday of March, July, and November at Coatesville. Election of officers in January.

MEMBERS (78).

Aiken, James, Berwyn.
Aiken, Thomas Gerald, Berwyn.
Baker, Fred L., Atglen.
Baker, Jane R., West Chester.
Barry, Chester LeRoy, Oxford.
Baugh, A. Wayne, Paoli.
Betts, William W., Chadds Ford (Del. Co.).
Bringhurst, Joseph, West Chester.
Brower, Charles J., Spring City.
Bullock, Charles C., Chatham.
Burkartmaier, John H., Avondale.
Carey, Robert B., Glenlock.
Cassel, Wilbur F., Spring City.
Catanach, Notman G., West Chester.
Evans, John K., Malvern.
Ewing, William B., West Grove.
Farrell, John A., West Chester.
Gifford, U. Grant, Avondale.
Graves, Everett A., Coatesville.
Heagey, Henry F., Cochranville.
Hemphill, Joseph, Jr., West Chester.
Holcomb, Guy T., Oxford.
Hollister, Frederick N., Embreeville.
Hoskins, Percy C., West Chester.
Howard, Robert W., Atglen.
Hughes, Robert C., Paoli.
Hutchison, D. Edgar, East Downingtown.
Kane, Bayard, West Chester.
Kerr, Edward, East Downingtown.
Keylor, Josiah B., Cochranville.
Klevan, Oscar Jesse, Unionville.
Kurtz, Clarence S., Malvern.
Laird, Joseph P., Devon.
Liebermann, Jacob D., West Grove.
Linn, George Wilds, Malvern.
Mackey, David, Oxford.
MaGraw, George T., Avondale.
Margolies, Michael, Coatesville.
Maxwell, James Rea, Parkesburg.
Merryman, John W., Toughkenamon.
Moore, Lawrence C., Chatham.
Mullison, Edwin D. S., Phoenixville.
Murphy, Walter A., Parkesburg.
Patrick, Elwood, West Chester.
Pennell, Howard Y., East Downingtown.
Perdue, William R., West Chester, R.D. 5.
Pleasants, Henry, Jr., West Chester.
Rea, Samuel L., Oxford.
Reeder, Jeremiah V., 224 Bridge St., Phoenixville.
Rettew, David P., Coatesville.
Reynolds, Conrad S., Kennett Square.
Richmond, Thomas S., Guthriesville.
Roberts, Charles J., Berwyn.
Rothrock, Harry A., West Chester.
Rothrock, Joseph T., West Chester.
Roulon, Samuel A., Jr., Phoenixville.

Scattergood, Joseph, West Chester.
Scott, J. Clifford, Oakbourne.
Scott, S. Horace, Coatesville.
Sharpless, William T., West Chester.
Smith, Mary H., Parkesburg.
Smith, Willis N., Phoenixville.
Spratt, George R., Coatesville.
Stone, Charles H., Coatesville.
Taylor, Jackson, Coatesville.
Taylor, James T., Pomeroy.
Thomas, John G., Newtown Square (Del Co.).
Umstead, George B., Phoenixville.
Walker, James B., Mendenhall.
Wells, Frank H., Chester Springs.
Wells, John R., Chester Springs.
West, Frederick B., Kemblesville.
Wherry, C. Norwood, Chatham.
Williams, Della Hannah, Berwyn.
Wilson, Samuel C., Collamer.
Witmer, Chester A., West Chester.
Woodward, Charles E., West Chester.
Woodward, W. Wellington, West Chester.

CLARION COUNTY SOCIETY.

(Organized May 5, 1865.)

President...Byron P. Walker, West Monterey.
V. Pres.....Dana Kahle, Knox.
Secretary...Franklin P. Phillips, Clarion.
Treasurer...John T. Rimer, Clarion.
Reporter....John F. Summerville, Monroe.
Censors.....David L. McAninch, Lamartine.
Albert J. Hepler, New Bethlehem.
Benjamin W. Phillips, Leeper.
Com. on Pub.
Policy and
Legislation..William M. Clover, Knox.

Stated meetings at selected places the fourth Tuesday in April, July and October. Annual meeting at Clarion the fourth Tuesday of January.

MEMBERS (31).

Booth, Fred K., Fairmount City.
Brown, Jas. A., New Kensington (Westm. Co.).
Clover, Cuvier L., Knox.
Clover, William M., Knox.
Dillenbeck, Charles O., Strattonville.
Fitzgerald, John M., Clarion.
Hepler, Albert J., New Bethlehem.
Hepler, Charles Verne, Hawthorn.
Hess, Henry N., Fryburg.
Hoffman, Charles W., Rimersburg.
Hoover, Albert M., Parkers Landing (Arms. Co.).
Huston, Charles C., Knox.
Kahle, Dana, Knox.
Keeler, Richard S., St. Petersburg.
Lackey, Sylvester J., Limestone.
McAninch, David Lewis, Lamartine.
Meals, Nelson M., Callensburg.
Miller, John B., Sligo.
Phillips, Benjamin W., Leeper.
Phillips, Franklin Pierce, Clarion.
Rimer, John T., Clarion.
Ross, Charles C., Clarion.
Sayers, Clement E., Hawthorn.
Shumaker, Edgar K., New Bethlehem.
Shumaker, Philip W., New Bethlehem.
Stute, John E., Parkers Landing (Arms. Co.).
Summerville, Harvey Bruce, Rimersburg.
Summerville, John F., Monroe.
Walker, Byron P., West Monterey.
Wilson, Benjamin G., Clarion.
Woods, George B., Curllsville.

CLEARFIELD COUNTY SOCIETY.

(Organized September 27, 1864. Chartered May 8, 1894.)

President...George B. Shivery, 206 Locust St., Clearfield.
V. Pres.....James A. Miller, Grampian.
Samuel D. Baily, Clearfield.
Secretary...J. M. Quigley, 1002 Dorey St., Clearfield.
Editor
and Rept....Gillespie B. Yeaney, Clearfield.
Treasurer...W.O.Wilson, 210 N.Second St.,Clearfield.
Censors.....George B. Kirk, Kylertown, 3 yrs.
S. C. Stewart, Clearfield, 2 yrs.
Wm. C. Browne, Burnside, 1 yr.
Com. on Pub.
Policy and
Legislation..H. Albert Blair, Curwensville.
George E. Mauk, Woodland.

Stated meetings the second Wednesday of each month at various places in the county. Election of officers in December.

MEMBERS (58).

Ake, Nicholas F. K., Curwensville.
Andrews, Warren W., Philipsburg (Center Co.).
Baily, Samuel D., Clearfield.
Bennett, Francis Guerney, St. Marys (Elk Co.).
Blair, H. Albert, Curwensville.
Brockbank, John I., Dubois.
Browne, William C., Burnside.
Buckingham, Hugh W., Mahaffey.
Cowdrick, Arthur D., 215 Reed St., Clearfield.
Dale, John, Philipsburg (Center Co.).
Dale, Wallace H., Houtzdale.
Derick, Alma Read, Bellwood (Blair Co.).
Dinger, Michael C., Morrisdale.
Elliott, George Bruce, Box 88, Coalport.
Flegal, Irwin Scott, Karthaus.
Gann, George Willard, Dubois.
Gordon, John W., First and Market Sts., Clearfield.
Harman, L. Cooper, Philipsburg (Center Co.).
Harper, Francis Watts, Irvona.
Harshberger, Joseph W., Boardman.
Hayes, Senes E., Byrnedale (Elk Co.).
Henderson, James L., Osceola Mills.
Henderson, Wm. B., Philipsburg (Center Co.).
Howe, Fred C., Munson.
Hurd, Michael E., Mahaffey.
Jackson, Robert, Osceola Mills.
Kirk, George B., Kylertown.
Leipold, Bert E., 405 Market St., Clearfield.
Lynn, Austin C., Osceola Mills.
McGirk, Charles E., Philipsburg (Center Co.).
McNaul, C. Gleni, 521 5th Ave., Juniata (Blair Co.).
Martsolf, Stanley Miller, Westover.
Mauk, George Edmund, Woodland.
Miller, James A., Grampian.
Miller, Summerfield J., Madera.
Patterson, Floyd G., Box 411, Dubois.
Piper, William S., 210 N. Second St.
Quigley, John M., 1002 Dorey St., Clearfield.
Quinn, Luther W., Box 273, Dubois.
Reiley, William E., Cherry St., Clearfield.
Ricketts, George Allen, Smithmill.
Rowles, J. Frank, Mahaffey.
Rowles, Lewis C., 2d and Pine Sts., Clearfield
Shivery, George B., 206 Locust St., Clearfield.
Smathers, Wilson J., 6-8, S. Main St., Dubois.
Stewart, Lever F., 108 N. Second St., Clearfield.
Stewart, Samuel C., 108 N. Second St., Clearfield.
Sullivan, John C., Dubois.
Thompson, Harry H., Philipsburg (Center Co.).
Thorpe, Walter P., Windburne.
Waterworth, Samuel J., 2d and Cherry Sts., Clearfield.
White, Inman H., Houtzdale.
Williams, Richard Lloyd, Houtzdale.
Wilson, Ward O., 210 N. Second St., Clearfield.
Woodside, Harry A., Lumber City.
Woodside, Horatio L., Bigler.
Wright, Louis W., Glen Richey.
Yeaney, Gillespie B., 104 S. Second St., Clearfield.

CLINTON COUNTY SOCIETY.

(Organized 1866. Reorganized 1883.)

President...John B. Critchfield, Lock Haven.
Sec., Treas.
and Rept....Robert B. Watson, Lock Haven.
Censors.....Joseph M. Corson, Chatham Run.
Francis P. Ball, Lock Haven.
Saylor J. McGhee, Lock Haven.
Com. on Pub.
Policy and
Legislation..Charles L. Fullmer, Renovo.
Theodore E. Teah, Renovo.

Stated meetings in Lock Haven Hospital the fourth Friday of each month at 8 P.M. Election of officers in January.

MEMBERS (22).

Ball, Francis P., Lock Haven.
Corson, Joseph M., Chatham Run.
Critchfield, John B., Lock Haven.
Dumm, John M., Mackeyville.
Fullmer, Charles L, Renovo.
Gillespie, William P., Renovo.
Gilmore, John K., Renovo.
Green, George D., Lock Haven.
Holloway, Luther M., Salona.
Huston, Joseph H., Clintondale.
Liken, Loyal L., Flemington.
Lubrecht, James Louis, Lock Haven.
McGhee, Saylor J., 214 W. Main St., Lock Haven.
Mervine, Graydon D., Bitumen.
Moorehouse, William G., Columbia (Lancaster Co.).
Painter, Allen B., Mill Hall.
Roach, Thomas E., Renovo.
Rosser, Orin H., Renovo.
Shoemaker, William J., Lock Haven.
Teah, Theodore E., Renovo.
Watson, Robert B., Lock Haven.
Welliver, William E., Lock Haven.

COLUMBIA COUNTY SOCIETY.

(Organized June 31, 1858.)

President...William C. Hensyl, Berwick.
V. Pres.....Theodore C. Harter, Bloomsburg.
Ambrose Shuman, Catawissa.
Sec., Treas.
and Rept....Luther B. Kline, Catawissa.
Censors.....J. Elmer Shuman, Bloomsburg, 3 yrs.
John T. Macdonald, 213 Fifth St., Bloomsburg, 2 yrs.
James R. Montgomery, Bloomsburg.
Com. on Pub.
Policy and
Legislation..Ralph E. Miller, Bloomsburg.
William T. Vance, Orangeville, R.D.
George E. Follmer, Orangeville.

Stated meetings at Bloomsburg second Thursday of March, June, September and December; at Berwick second Thursday in February, May, August and November; at Catawissa second Thursday in January, April, July and October. Election of officers in December.

MEMBERS (45).

Albertson, Charles K., Fairmount Springs (Luz.Co.).
Alleman, Emanuel A., Berwick.
Altmiller, Charles F., Bloomsburg.
Arment, Samuel B., Bloomsburg.
Bierman, Henry, 38 W. Fourth St., Bloomsburg.
Bowman, John H., Berwick.
Brown, J. Jordan, Bloomsburg.
Bruner, John W., Bloomsburg.
Carl, Allen Vincent, Numidia.
Christian, Howard S., Millville.
Clark, Frank R., Berwick.
Cohen, Joseph, Berwick.
Davis, Edward L., Berwick.
Drum, George F., Mifflinville.
Follmer, George Elmer, Orangeville.
Follmer, J. Brooks, Berwick.
Gardner, Benjamin Franklin, Bloomsburg.
Gemmell, John Michael, Millville.
Glenn, Edwin A., Berwick.
Gordner, Jesse W., Jerseytown.
Harter, Theodore C., Bloomsburg.
Hensyl, William C., Berwick.
Hess, Delbert M., Rohrsburg.
Hoffa, John Sidney, Benton.
Hower, Heister V., 345 Wyoming Ave., Scranton (Lackawanna Co.).
John, J. Stacey, Bloomsburg.
Kline, Luther B., Catawissa.
Lazarus, J. Sanderson, Bloomsburg.
Macdonald, John T., 213 5th St., Bloomsburg.
Miller, Ralph E., Bloomsburg.
Montgomery, James R., Bloomsburg.
Patterson, Isaac E., Benton.
Pfahler, J. Fred, Berwick.
Rarig, Howard R., Ausable Forks, N. Y.
Robbins, Clifton Z., Bloomsburg.
Sharpless, Benjamin F., Catawissa.
Shuman, Ambrose, Catawissa.
Shuman, J. Elmer, Bloomsburg.
Steck, Charles T., Berwick.
Vance, William T., Orangeville, R.D.
Vastine, J. Marion, Catawissa.
Warntz, Ralph E., Nescopeck (Luzerne Co.).
Willits, Isaiah W., Bloomsburg.
Wintersteen, John C., Numidia.
Wolfe, Isaac R., Espy.

CRAWFORD COUNTY SOCIETY.

(Organized 1867.)

President...David C. Mock, Cambridge Springs.
V. Pres.....Margaret B. Best, Meadville.
William E. Hyskell, Meadville.
Sec., Treas.
and Rept....Cornelius C. Laffer, Meadville.
Censors.....Clarence C. Hill, Meadville.
J. Russell Mosier, Meadville.
Samuel J. Dickey, Blooming Valley.
Com. on Pub.
Policy and
Legislation..Winters D. Hamaker, Meadville.
Edwin E. Brophy, Meadville.
Harry L. Brush, Conneaut Lake.
Prog. Com..G. E. Humphrey, Cambridge Springs.
William E. Hyskell, Meadville.
Oliver H. Jackson, Meadville.

Stated meetings in Meadville the first Wednesday of each month. Election of officers in January.

MEMBERS (48).

Axtell, John L., Cochranton.
Baird, Homer Dale, Cochranton.
Best, Margaret Blanche, Meadville.
Brophy, Edwin E., Meadville.
Brush, Harry L., Conneaut Lake.
Carpenter, Meade C., Linesville.
Clark, Robert W., Venango.
Clawson, Frank A., Meadville.
Clouse, Arne Wilbur, Geneva.
Daniels, Henry M., Woodcock.
Dennis, Alfred L., Conneautville.
Dickey, Samuel J., Blooming Valley.
Ellison, George W., Townville.
Ferer, Charles K., Meadville.
Gamble, R. Bruce, Meadville.
Gamble, William M., Little Cooley.
Gray, M. Dwight, Cambridge Springs.
Greenfield, Robert N., Penn Line.
Hamaker, Edward M., Meadville.

Hamaker, Winters D., Meadville.
Hazen, Sylvester F., Hartstown.
Hill, Clarence C., Meadville.
Humphrey, Glennis E., Cambridge Springs.
Hyskell, William E., Meadville.
Jackson, Oliver H., Meadville.
Johnson, William Mount, 283 Center St., Meadville.
Laffer, Cornelius C., Meadville.
Lewis, Frank L., Atlantic.
Little, Theodore A., Spartansburg.
Logan, James A., Cambridge Springs.
Logan, James Clark, Titusville.
McCune, Fred K., Mosiertown.
McFate, J. Charles, Meadville.
Mock, David C., Cambridge Springs.
Mosier, J. Russell, Meadville.
Nisbet, Frederick L., Meadville.
Quay, William H., Jr., Townville.
Roberts, John K., Meadville.
Shaffer, William Walter, Cochranton.
Skelton, William B., Meadville.
Smith, Rodney S., Saegerstown.
Snodgrass, David G., Meadville.
Thomas, George D., Meadville.
Thompson, Charles Wesley, Meadville.
Walker, Herman H., Linesville.
Walker, James N., Linesville.
Williams, Clyde L., Harmonsburg.
Young, Frank D., Cambridge Springs.

CUMBERLAND COUNTY SOCIETY.

(Organized July 17, 1866.)

President...R. McMurran Shepler, Carlisle.
V. Pres.....Henry A. Smith, Mechanicsburg.
Elmer A. Hudson, Carlisle.
Sec. and
Reporter....Calvin R. Rickenbaugh, Carlisle.
Treasurer...Jacob C. Kisner, Carlisle.
Censors.....David W. Van Camp, Plainfield.
S. Dana Sutliff, Shippensburg.
John W. Bowman, Lemoyne.
Com. on Pub.
Policy and
Legislation..S. Dana Sutliff, Shippensburg.
S. E. Mowery, Mechanicsburg.
Harvey B. Bashore, West Fairview.

Stated meetings second Tuesday of January, April, July and October; the January meeting at Carlisle; the place of the other meetings to be determined by vote of the society or upon invitation. Election of officers in January.

MEMBERS (38).

Allen, Americus R., Carlisle.
Bashore, Harvey B., West Fairview.
Bowman, John W., Lemoyne.
Brown, Samuel G. A., Shippensburg.
Cadwallader, Seth I., West Fairview.
Conlyn, Edwin S., Carlisle.
Cowell, Selden Sylvester, Huntsdale.
Etter, H. B., Shippensburg.
Good, John F., New Cumberland.
Hershner, Newton W., Mechanicsburg.
Hudson, Elmer A., Carlisle.
Irwin, George G., Mount Holly Springs.
Kisner, Jacob C., Carlisle.
Koons, Philip R., Mechanicsburg.
Lawton, Henry C., Camp Hill.
Lee, Hildegard Langsdorf, Carlisle.
Lefever, Enos K., Boiling Springs.
McBride, Thomas S., Shippensburg.
McCreary, J. Bruce, Shippensburg.
Meily, Harry S., Carlisle.
Mowery, Samuel E., Mechanicsburg.
Peters, William E., Carlisle.
Plank, Edward R., Carlisle.
Preston, Thomas Walbank, Carlisle, R.D. 1.
Reeser, Norman B., Bloserville.
Rickenbaugh, Calvin R., Carlisle.
Ruch, William S., Carlisle.
Russell, W. Stewart, 321 Market St., Harrisburg (Dauphin Co.).
Shepler, R. McMurran, Carlisle.
Shoemaker, Ferdinand, U.S. Indian Service, Washington, D. C.
Smith, Henry Albert, Mechanicsburg.
Spangler, Harry A., Carlisle.
Spangler, Jacob B., Mechanicsburg.
Stem, James C., Lemoyne.
Sutliff, S. Dana, Shippensburg.
Van Camp, David W., Plainfield.
Wagoner, Parker W., Carlisle.
Zimmerman, George L., Carlisle.

DAUPHIN COUNTY SOCIETY.

(Organized 1868.)

(Harrisburg is the post office when street address only is given.)

President...William T. Douglass, 1154 Derry St.
V. Pres.....George L. Laverty, 404 N. Third St.
Sec. and
Treasurer...Frank D. Kilgore, 2011 N. Sixth St.
Reporter....H. H. Farnsler, 1463 Market St.
Trustees....W. T. James, 1900 N. Sixth St.
John W. Park, 38 North Second St.
George L. Brown, Fort Hunter.
Censors.....John H. Fager, Jr., 406 N. Third St.
George B. Kunkel, 118 Locust St.
Samuel N. Traver, 128 Locust St.
Com. on Pub.
Policy and
Legislation..J. E. Dickinson, 228 N. Second St.
Wilmer R. Batt, Department of Health.
C. R. Phillips, 1646 N. Third St.
Robert E. Holmes, 18th and State Sts.
Edwin A. Nicodemus, 1439 Derry St.
Martin L. Hershey, Hershey.
H. F. Smith, 130 State St.

Regular meetings are held at 8:30 P.M. on the first Tuesday of every month except July and August, at the Harrisburg Academy of Medicine Building, 319 N. Second St., Library and reading room same place. Board of Governors meets last Tuesday of each month at 8:30 P.M. Election of officers in January. The Dauphin Medical Academician issued first of month.

MEMBERS (129).

Arnold, John Loy, 1509 Market St.
Baker, William C., Hummelstown.
Batdorf, Claude Wellington, 1622 N. Third St.
Batt, Wilmer R., Dept. of Health, State Capitol.
Bauder, George W., 1223 North Second St.
Bishop, William Thomas, 211 Pine St.
Blair, Thomas S., 403 North Second St.
Bowman, Thomas E., 1541 State St.
Brown, George L., Fort Hunter.
Bryner, John H., 705 North Seventeenth St.
Coble, Aaron C., Dauphin.
Cochran, John C., St. Marys (Elk Co.).
Cocklin, Charles C., 126 Walnut St.
Coover, Carson, 223 Pine St.
Coover, Frederick W., 223 Pine St.
Crampton, Charles H., 901 Capitol St.
Crawford, Samuel M., 413 Market St.
Culp, John F., 410 North Third St.
Dapp, Gustave A., 1818 North Third St.
Darlington, Emerson E., 2025 North Sixth St.
Deckard, Park A., 709 North Third St.
Deckard, Percy E., 413 Market St.
DeVenney, John C., 1115 North Second St.

Dickinson, J. Edward, 228 North Second St.
Douglas, Henry Rhea, 1800 Market St.
Douglass, William T., 1154 Derry St.
Duff, William L., 930 North Sixth St.
Earnest, Samuel F., Hummelstown.
Eisenhart, Harry P., 1122 North Second St.
Ellenberger, John Wesley, 922 N. Third St.
Evans, William P., Middletown.
Everhart, Edgar S., LeMoyne (Cumberland Co.).
Exley, Maude C., 205 State St.
Fager, John H., Jr., 406 North Third St.
Fager, V. Hummel, 410 North Second St.
Farnsler, H. Hershey, 1463 Market St.
Ferguson, Rutherford Hayes, Herminie.
Flowers, Claude J. B., 1609 Market St.
Fritchey, Charles A., 902 North Third St.
Funk, David S., 300 North Second St.
Gemmill, James R., Millville (Columbia Co.).
George, Henry William, Middletown.
Goldman, Louis C., 710 North Sixth St.
Goodman, Charlotte E., State Hospital.
Gross, Herbert F., 1412 North Second St.
Hamilton, Hugh, 315 Walnut St.
Hart, Charles V., 226 South Second St.
Hershey, Martin L., Hershey.
Hetrick, David Joseph, 54 N. Thirteenth St.
Holmes, Robert E., 18th and State Sts.
Hottenstein, D. Edgar, Millersburg.
Isenberg, Alfred P., 413 Market St.
James, William T., 1900 North Sixth St.
Jauss, Christian E., 1323 North Sixth St.
Jeffers, Benjamin B., 36 N. Front St., Steelton.
Keene, Charles E. L., 1849 Berryhill St.
Kilgore, Frank D., 2011 North Sixth St.
Klase, Harry E., 1706 Market St.
Kunkel, George B., 118 Locust St.
Laverty, DeWitt C., Middletown.
Laverty, George L., 404 North Third St.
Lawson, Edward Kirby, Penbrook.
Lenker, Jesse L., 402 North Second St.
McAlister, John B., 234 North Third St.
McGowan, Hiram, 236 State St.
MacMullen, John W., 1432 Walnut St.
Manning, Charles J., 1519 North Sixth St.
Meals, Ezra S., Third and North Sts.
Middleton, Wm. J., 101 N. Second St., Steelton.
Miller, David I., 1839 North Sixth St.
Mish, George F., Middletown.
Moffatt, Ralph E., 219 North Second St.
Moffitt, George R., 200 Pine St.
Myers, Hewett C., 232 S. Second St., Steelton.
Newman, Oscar A., 617 Race St.
Nicodemus, Edwin A., 1439 Derry St.
Nissley, Martin L., Hummelstown.
Oenslager, John, Jr., 711 North Third St.,
Orth, Henry L., State Hospital.
Oxley, James E. T., Swab Bldg., Thirteenth and Market Sts.
Page, Arthur L., 1315 Derry St.,
Park, John Walter, 38 North Second St.
Peters, Jacob M., 195 South Front St., Steelton.
Phillips, Clarence R., 1646 North Third St.
Plank, John R., 106 North Front St., Steelton.
Putt, Maurice O., Oberlin.
Rahter, J. Howard, Box 188, 324 N. Second St.
Raunick, John M. J., 212 Hamilton St.
Rebuck, Charles S., 410 North Third St.
Reckord, Frank F. D., 220 Kelkes St.
Rickert, Charles M., Box 316, Millersburg.
Ridgway, Richard Frederick L., Pouch A., Penn. State Hospital.
Ritchie, Melanchton M., 36 S. Thirteenth St.
Ritzman, Allen Z., 812 North Sixth St.
Saul, Charles H., 30 Locust St., Steelton.
Schaeffer, Uriah R., Hummelstown.
Seibert, William H., 31 S. Front St., Steelton.
Shaffer, Harry A., Williamstown.
Shearer, Alfred L., 808 North Sixth St.
Shepler, Norman Bruce, 711 North Third St.
Shope, Jacob W., 32 S. Thirteenth St.
Shull, William M., Hummelstown.
Smith, B. Frank, 1601 Market St.
Smith, Charles H., Linglestown.
Shumaker, Luther M., 2102 North Sixth St.
Smith, Harvey F., 130 State St.
Spencer, Herbert Alonzo, Wiconisco.
Stauffer, Charles C., 1926 Green St.
Stevens, John C., 240 South Thirteenth St.
Stites, George M., Williamstown.
Stites, Thomas H. A., Hamburg State Sanatorium, Hamburg (Berks Co.).
Stull, George B., 217 Woodbine St.
Sullivan, Charles M., 1439 Market St.
Swab, Robert D., 265 Main St., Steelton.
Swiler, Robert D., 1331 Derry St.
Taylor, Louise H., 1800 North Third St.
Traver, David B., 145 S. Front St., Steelton.
Traver, Samuel N., 128 Locust St.
Treiman, George A., 426 North St.
Trullinger, Charles I., 2022 North Sixth St.
Walmer, E. LeRue, 112 North Thirteenth St.
Walter, Henry B., 1317 North Third St.
West, William H., 1801 Green St.
Whipple, Earle Rogers, 241 Pine St., Steelton.
Widder, George H., 1244 Derry St.
Wiener, Hyman R., 306 North Second St.
Wintersteen, Grace, State Hospital.
Wolford, Martin L., 328 Chestnut St.
Wright, William E., 206 State St.
Zimmerman, George A., 1407 Market St.

DELAWARE COUNTY SOCIETY.

(Organized May 30, 1850.)

President...Alexander R. Morton, Morton.
V. Pres.....Ethan A. Campbell, Chester.
Harry M. Armitage, Chester.
Sec. and Treasurer...C. Irvin Stiteler, Box 32, Chester.
Reporter....Walter E. Egbert, Chester.
Librarians..Charles B. Shortlidge, Lima.
Amy E. White, Chester.
Censors.....J. Harvey Fronfield, Media, 3 yrs.
Daniel J. Monihan, Chester, 2 yrs.
Katharine Ulrich, Chester, 1 yr.
Com. on Pub. Policy and Legislation..Robert S. Maison, Chester.
Jonathan L. Forwood, Chester.
Daniel W. Jefferis, Chester.
Exec. Com..Alexander R. Morton, Morton.
C. Irvin Stiteler, Chester.
Edward W. Bing, Chester.

Stated meetings the third Thursday of each month at 3:30 P.M., at Chester Hospital unless otherwise directed. Election of officers in January.

MEMBERS (77).

Armitage, Harry M., Chester.
Arnold, Clifford H., 301 W. Seventh St., Chester.
Baker, Frances N., Media.
Bing, Edward W., Chester.
Boice, Ervrit E., Moores.
Brown, Ellen E., Chester.
Bryant, F. Otis, Chester.
Bullock, Edwin C., Upland.
Campbell, Ethan A., Chester.
Cross, George H., Chester.
Crothers, George F., Marcus Hook.
Crothers, Samuel Ross, Chester.

Dalton, David, Sharon Hill.
Darlington, Horace, Concordville.
Dewees, A. Lovett, Haverford (Montg. Co.).
Dick, H. Lenox H., Darby.
Dickeson, Morton P., Media.
Donahoo, Harry C., Chester.
Easby, Alice Rogers, Media.
Egbert, Walter E., Chester.
Emery, Walter V., Chester.
Evans, Fred H., Chester.
Evans, William B., Chester.
Evans, William Knowles, Chester.
Eynon, John Schofield, Chester.
Forwood, Jonathan Larkin, Chester.
Fronfield, J. Harvey, Media.
Gallagher, Harry, Glenolden.
Gottschalk, Leon, Marcus Hook.
Gray, Stoddard P., Chester.
Harvey, E. Marshall, Media.
Hiller, Hiram M., Chester.
Hitchens, Arthur Parker, Glenolden.
Hollingsworth, I. Pemberton P., Glen Mills.
Horning, Henry, 812 Monmouth St., Gloucester, N.J.
Howell, Elizabeth W., Chester.
Hunlock, Fred S., Collingdale.
Janvier, George Victor, Lansdowne.
Jefferis, Daniel W., Chester.
Johnston, Frank E., Moores.
Kalbach, I. Irwin, Glen Riddle.
Keating, Peter McCall, Wawa.
Kilduffe, Robert, Jr., Chester.
Landry, Walter A., Chester.
LaShelle, Charles L., Lenni Mills.
Lehman, William F., Chester.
Lewis, Mary R. Hadley, 46 North Fortieth St., Philadelphia (Philadelphia Co.).
Lithgow, William D., Chester.
Lyons, J. Chalmers, Marcus Hook.
Maison, Robert S., Chester.
Monihan, Daniel J., Chester.
Morton, Alexander R., Morton.
Neufield, Maurice A., Chester.
Nothnagle, Frank R., Chester.
Orr, Adrian V. B., Chester.
Parsons, Isaac I., Media.
Partridge, Conrad L., Ridley Park.
Pyle, Jerome L., Glen Mills.
Reynolds, Victor M., Darby.
Roxby, John Byers, Swarthmore.
Schoff, Charles H., Media.
Sherman, Jeannette H., Ridley Park.
Shortlidge, Charles B., Lima.
Sickel, George B., Woodlyn.
Smith, Norman D., Rutledge.
Stanton, Herbert C., Clifton Heights.
Starbuck, J. Clinton, Media.
Stellwagen, Thomas C., Media.
Stiteler, C. Irvin, Box 32, Chester.
Taylor, H. Furness, Ridley Park.
Trimble, Samuel, Lima.
Ulrich, Katharine, Chester.
Weidner, Frances, Chester.
White, Amy E., Chester.
Williams, Ernest T., Media.
Wolfe, A. Chester, Ridley Park.
Wood, J. William, Chester.

ELK COUNTY SOCIETY.

(Organized 1881.)

President...Walter C. Shaw, Ridgway.
V. Pres.....George M. Hutchison, Dagus Mines.
W. H. Bush, Emporium (Cameron Co.).
Sec. and Reporter....Samuel G. Logan, Ridgway.
Treasurer...M. M. Rankin, Ridgway.
Censors.....John C. McAllister, Ridgway, 3 yrs.
Russell P. Heilman, Emporium, 2 yrs.
John W. Warnick, Johnsonburg, 1 yr.
Com. on Pub. Policy and Legislation..John C. McAllister, Ridgway.
Samuel G. Logan, Ridgway.
Clarence G. Wilson, St. Marys.

Stated meetings by appointment the second Thursday of each month at Johnsonburg, Ridgway, St. Marys, or Emporium. Election of officers in January.

MEMBERS (27).

Atkinson, Walter Mitchell, Brockwayville (Jef. Co.).
Barratt, Stanley, Wilcox.
Beale, Bertram A., Dubois (Clearfield Co.).
Bush, Walter H., Emporium (Cameron Co.).
Davis, Arthur F., St. Marys.
Earley, Francis G., Ridgway.
Falk, H. S., Emporium (Cameron Co.).
Flynn, James G., Ridgway.
Grounds, Wilbert Lee, Roaring Spring (Blair Co.).
Heilman, Russell P., Emporium (Cameron Co.).
Humphreys, Frank R., Eldred (McKean Co.).
Hutchison, George M., Dagus Mines.
LeVan, Jacob K., St. Marys.
Logan, Samuel G., Ridgway.
McAllister, John Craig, Ridgway.
Müllhaupt, Alfred, St. Marys.
Palmer, William R., Johnsonburg.
Rankin, Michael M., Ridgway.
Russ, Eben J., St. Marys.
Rutherford, James E., Ridgway.
Sharp, Eugene B., Johnsonburg.
Shaw, Walter C., Ridgway.
Smith, Henry H., Johnsonburg.
Stilley, Jesse C., Portland Mills.
Warnick, John W., Johnsonburg.
Wells, James H., Wilcox.
Wilson, Clarence G., St. Marys.

ERIE COUNTY SOCIETY.

(Reorganized June 25, 1895.)

(Erie is the post office when street address only is given.)

President...Wallace R. Hunter, 804 Peach St.
V. Pres.....Augustus H. Roth, 731 French St.
Secretary...Scott D. Gleeten, 822 West Tenth St.
Reporter....Chester H. McCallum, 2018 East Ave.
Treasurer...Hugh M. Moorhead, 801 French St.
Librarian...Fred E. Ross, 154 West Eighth St.
Censors.....George A. Reed, 122 West 21st St.
John J. Bell, 731 French St.
D. H. Strickland, 153 West Seventh St.
David N. Dennis, 221 West Ninth St.
Owen M. Shreve, 162 West Eighth St.
Com. on Pub. Policy and Legislation..D. H. Strickland, 153 W. Seventh St.
G. W. Schlindwein, 138 W. Ninth St.
D. V. Reinoehl, Eighth and French Sts.
John W. Wright, 247 W. Eighth St.

Stated meetings in the Library Building, Erie, the first Tuesday of each month, at 8:30 P.M. Election of officers in January.

MEMBERS (100).

Ackerman, John, 138 West Seventh St.
Barkey, Peter, 130 West Ninth St.
Barney, Elfred R., Wattsburg.
Barrett, George Thomas, 420 East Eleventh St.
Beck, Frank William, Girard.
Bednarkiewicz, Ignatius A., 602 E. Twelfth St.
Belding, John Eastman, 330 W. Ninth St.
Bell, John J., 731 French St.

Boughton, Guy C., 810 Peach St.
Brown, Dean S., 149 West Eighth St.
Chaffee, Orel N., 820 Sassafras St.
Chidester, Charles B., 219 W. Eighteenth St.
Croop, J. Elmer, 628 East Sixth St.
Darrow, John Allison, 359 East Sixth St.
Dasher, J. Howard, 114 E. Sixth St.
Dennis, David N., 221 West Ninth St.
De Tuerck, John K., 338 East Ninth St.
Dickinson, George S., 140 West Eighth St.
Douville, Jeffrey C., North East.
Drozeski, Edward H., 117 East Sixth St.
Dudenhoeffer, Joseph, 216 W. Twenty-fourth St.
Dunn, Harrison A., 132 West Ninth St.
Dunn, Ira J., 406 Masonic Temple.
Eastman, Anstice Ford, 227 W. Seventh St.
Elston, Gabriel A., Corry.
Fisher, Fred, Jr., 324 East Sixth St.
Flynn, T. M. M., 156 East Sixth St.
Foringer, Henry H., 143 West Eighth St.
Gamon, Frank, 126 East Sixth St.
Gillespie, Martin S., Edinboro.
Gleeten, Scott D., 822 West Tenth St.
Hall, Friend L., 262 West Eighteenth St.
Hart, Fred C., Girard.
Heard, Corydon F., 402 Masonic Temple.
Heard, James L., North East.
Henry, Ralph E., 504 West Eighteenth St.
Hess, Elmer, 31 W. Eleventh St.
Howe, Jesse Burkett, 21 E. Eighth St.
Humphrey, William J., Union City.
Hunter, Wallace R., 804 Peach St.
Irwin, Jeremiah S., 638 West Eighteenth St.
Judge, Margaret Allen, 234 West Eighth St.
Kalb, George B., 405 Masonic Temple.
Kemble, Charles C., 146 West Ninth St.
Kendall, Eugene E., Waterford.
Kern, Rudolph A., 1015 West Eighth St.
Krum, Astley G., 163 West Eighteenth St.
Law-Wright, Katharine Hays, 247 West Eighth St.
Lefever, Clarence H., 507 West Eleventh St.
Lewinson, Beila, 315 West Eighteenth St.
Lick, Maxwell, 714 Sassafras St.
Little, Watson W., Waterford.
Lloyd, John H., R.D. 2, Erie.
Lyons, Harry Eugene, Fairview.
McCallum, Chester H., 2018 East Ave.
McCallum, Malcolm J., 133 West Ninth St.
McCarthy, Frank P., 147 East Fourth St.
McElree, Frank Eugene, Girard.
Miller, Adelbert B., North Girard.
Miller, Richard O., 420 West Eighth St.
Montgomery, James H., 234 West Sixth St.
Moorhead, Hugh M., 801 French St.
O'Donnell, John J., 2518 Parade St.
Parsons, Percy P., 1017 West Tenth St.
Pfadt, James J., 613 West Twenty-sixth St.
Peters, Joel M., Albion.
Peters, C. O., Albion.
Purcell, Thomas, 716 Sassafras St.
Putnam, Burton H., North East.
Putts, B. Swayne, 734 West Eighth St.
Ray, George S., 153 West Eighth St.
Reed, George A., 122 W. Twenty-first St.
Reinoehl, David V., Eighth and French Sts.
Ross, Fred E., 154 W. Eighth St.
Roth, Augustus H., 731 French St.
Roueche, William H., 226 West Eighth St.
Rutherford, J. Frank, Cranesville.
Schlindwein, George Wm., 138 West Ninth St.
Schrade, Anna M., 716 Sassafras St.
Shreve, Owen M., 162 West Eighth St.
Shultz, Abner W., 1105 Lehman St., Lebanon (Lebanon Co.).
Silliman, James E., 137 West Eighth St.
Smith, A. Louis, Corry.
Steinberg, Edward I., 902 West Eighth St.
Stoney, George F., 746 East Sixth St.
Strickland, Charles G., 153 West Seventh St.
Strickland, David H., 153 West Seventh St.
Strimple, J. Thurman, 108 E. Twenty-first St.
Studebaker, George M., 426 East Tenth St.
Tannehill, Joseph K., Girard.
Thompson, Ross W., Wesleyville.
Tredway, Thomas Palmer, 810 Peach St.
Umburn, LeRoy, Albion.
Waggoner, Charles Carroll, Corry.
Walsh, Frank A., 128 East Seventh St.
Washabaugh, William B., 920 E. Twenty-first St.
Weibel, Elmer G., 125 W. Eighth St.
Wishart, Hagar MacLean, North East.
Woodruff, Row O., Waterford.
Wright, John W., 247 West Eighth St.

FAYETTE COUNTY SOCIETY.

(Organized May 18, 1869.)

President...Arthur E. Crow, Uniontown.
V. Pres.....James H. Sangston, McClellandtown.
Earl C. Sherrick, Connellsville.
Secretary...J. P. Ritenour, 21 Mill St., Uniontown.
Treasurer...James E. VanGilder, Uniontown.
Reporter....George H. Robinson, Uniontown.
Censors.....Owen R. Altman, Uniontown.
Harry J. Bell, Dawson.
Thomas B. Echard, Connellsville.
Com. on Pub. Policy and Legislation..Owen R. Altman, Uniontown.
Arthur E. Crow, Uniontown.
Thomas H. White, Connellsville.
Exec. Com..A. E. Crow, Uniontown.
J. P. Ritenour, Uniontown.
S. A. Baltz, Uledi.

Regular meetings shall be held the first Thursday of each month at a time and place designated by the Executive Committee.

MEMBERS (110).

Adams, Charles W., Uniontown.
Altman, Owen R., Uniontown.
Bailey, William J., Connellsville.
Baltz, Samuel A., Uledi.
Baum, Simon H., Uniontown.
Bell, Harry J., Dawson.
Bierer, Charles D., Uniontown.
Brooks, Don D., Normalville.
Brown, Henry Stanley, Adah.
Carroll, J. B., Dunbar, R.D. 32.
Churchill, Wm. James, Markell Bldg., Connellsville.
Cloud, Milton H., Masontown.
Cochran, James L., Connellsville Junction.
Cogan, Jesse F., Dawson.
Coll, Hugh J., Connellsville.
Conn, Clyde W., Smithfield.
Crosbie, George T., Belle Vernon.
Crow, Arthur E., Uniontown.
Davidson, Carlton H., New Salem.
Detweiler, John F., Uniontown.
Dixon, John C., Connellsville.
Doran, Benjamin P., Uniontown.
Douglas, Edward Wark, Connellsville.
Echard, Thomas B., Connellsville.
Eddy, Alexander L., Greensboro (Greene Co.).
Edie, Elliott B., Connellsville.
Evans, George O., Uniontown.
Francis, Thomas R., Connellsville.
Frankenburger, W. Sturgis, Allison.
Gaddis, Levi S., Uniontown.
Gallagher, George W., Connellsville.
Goodpaster, William H., Option (Allegheny Co.).
Gordon, John W., Belle Vernon.
Graham, Charles R., Brownsville.

Gribble, Russell T., Fairchance.
Griffin, George H., Uniontown.
Guiher, Horace B., Smithfield.
Hackney, Jacob S., 36 W. Church St., Uniontown.
Hagan, Arthur S., Uniontown.
Hall, Herbert E., Vanderbilt.
Hansell, George B., Fayette City.
Harris, Benjamin F., Connellsville.
Hazlett, Jesse H., Vanderbilt.
Heath, Robert E., Fairchance.
Hess, George H., Uniontown.
Hibbs, Samuel E., Gallatin Ave., Uniontown.
Hoffman, Harry Clyde, Connellsville.
Hoover, Freeman S., Brownsville.
Hopwood, George B., Chestnut Ridge.
Hopwood, William Henry, Smock.
Ingraham, Eben R., Masontown.
Jackson, James Marcus, New Salem.
Jackson, John D., Connellsville.
Jeffrey, Robert Harrison, Uniontown.
Johnson, Chester B., New Salem.
Kerr, J. French, Connellsville.
Kerr, Norwin L., Everson.
Kidd, Alexander R., Connellsville.
Kimmel, William S., Republic.
Koehler, Malcolm H., Connellsville.
LaBarre, John Pollard, 406 F.N.B. Bldg., Uniontown.
LaClair, Charles H., Uniontown.
Larkin, Martin J., Brier Hill.
Larkin, Peter A., Uniontown.
Lilley, Wilbur M., Brownsville.
Lowe, David Earl, New Salem.
Lowman, Norman Bert, Belle Vernon.
Luman, Clark M., Uniontown.
McCombs, Edgar A., Connellsville.
McCormick, Louis P., Connellsville.
McCune, Samuel G., Buena Vista (Alle. Co.).
McHugh, William A., Uniontown.
Martin, Ralph S., Star Junction.
Means, William H., Percy.
Messmore, Harry Benjamin, Brownsville.
Messmore, John Lindsey, Masontown.
Messmore, Walter T., Smithfield.
Neff, George W., Masontown.
Noon, Milton A., Everson.
Odbert, Arthur King, S. Brownsville.
O'Neil, Andrew, Uniontown.
Opinsky, Andrew G., Uniontown.
Osborn, Wilkins William, Upper Middletown.
Parshall, James W., Uniontown.
Patterson, William P., Fairchance.
Pflueger, Charles J., Fairchance.
Pisula, Vincent Paul, Everson.
Quinn, William L., Fayette City.
Rasely, Edwin R., Uniontown.
Rebok, Harry Edward, Waltersburg.
Reichard, Lewis N., Brownsville.
Ritenour, Joseph P., 21 Mill St., Uniontown.
Robinson, George H., Uniontown.
Ryan, Charles C., Republic.
Sangston, D. Hibbs, McClellandtown.
Sangston, James H., McClellandtown.
Scott, William, Mt. Braddock.
Seaton, Lewis H., Grays Landing (Greene Co.).
Sherrick, Earl C., Connellsville.
Smith, Alfred C., Brownsville.
Smith, Chas. H., 71 Morgantown St., Uniontown.
Smith, Peter Franklin, Uniontown.
Stollar, Bert Lee, Fayette City.
Sturgeon, John D., Uniontown.
Utts, Charles William, Connellsville.
Van Gilder, James E., Uniontown.
Wagoner, LeRoy C., Brownsville.
Warne, William Wilbur, Dunbar.
White, Thomas H., Connellsville.
Wooding, Charles Edward, Merrittstown.

FRANKLIN COUNTY SOCIETY.

(Organized January 24, 1825. Reorganized 1869.)

President...J. E. Kempter, Chambersburg.
V. Pres.....John M. Gelwix, Chambersburg.
Sec. and Reporter....John J. Coffman, Scotland.
Treasurer...Wm. Francis Skinner, Chambersburg.
Censors.....J. Burns Amberson, Waynesboro.
W. Francis Skinner, Chambersburg.
Frank N. Emmert, Chambersburg.
Com. on Pub. Policy and Legislation..David F. Unger, Mercersburg.
Leslie M. Kauffman, Kauffman.
Exec. Com..J. E. Kempter, Chambersburg.
John J. Coffman, Scotland.
John K. Gordon, Chambersburg.

Stated meetings in the Library Rooms, Chambersburg, third Wednesday of each month unless otherwise decided. Election of officers in January.

MEMBERS (58).

Amberson, James Burns, Waynesboro.
Ash, William S., Montreal, Canada.
Asper, Guy P., Chambersburg.
Brosius, William H., Mont Alto.
Bushey, Franklin A., Greencastle.
Coffman, John J., Scotland.
Crist, Chester Garfield, Gettysburg (Adams Co.).
Croft, John W., Waynesboro.
Devor, John H., Chambersburg.
Emmert, Frank N., Chambersburg.
Enniss, Joseph, Waynesboro.
Fritz, Horace M., Quincy.
Gans, Charles C., Chambersburg.
Gay, William Madison, Mont Alto.
Gelwix, John M., Chambersburg.
Gilland, John C., Greencastle.
Gordon, John K., Chambersburg.
Gottshall, Florence M., Box E, Blue Ridge Summit.
Greenewalt, John C., Chambersburg.
Grove, Aaron B., Shady Grove.
Hartzell, Charles A., Fayetteville.
Haywood, Guy T., Upper Strasburg.
Holland, William E., Fayetteville.
Hoover, Percy D., Waynesboro.
Kauffman, Leslie M., Kauffman's.
Kempter, J. Elmond, Chambersburg.
Kennedy, Jas. S., Fort Barrancas, Pensacola, Fla.
Kinter, John H., St. Thomas.
Laughlin, Rebecca P., Waynesboro.
McClain, Harry C., Hustontown (Fulton Co.).
McLaughlin, Charles M., Greencastle.
Maclay, Joseph P., Chambersburg.
Mosser, John W., McConnellsburg (Fulton Co.).
Myers, Benjamin F., Chambersburg.
Noble, William P., Greencastle, R.D. 5.
Nunan, Nellie F. deH., Box E, Blue Ridge Summit.
Ogle, Charles Clinton, Chambersburg.
Palmer, Charles F., Chambersburg.
Palmer, Edgar W., Greencastle.
Robinson, Geo. M., McConnellsburg (Fulton Co.).
Saxe, LeRoy H., Fannettsburg.
Schultz, William C., Waynesboro.
Shoemaker, David M., Waynesboro.
Shull, Samuel D., Chambersburg.
Silk, Samuel A., 933 N. Lee Ave., Farrell (Mercer Co.).
Skinner W. Francis, Chambersburg.
Snively, A. Barr, Waynesboro.
Sollenberger, Aaron B., Waynesboro.
Stofer, M. Webster, R.D. 10, Chambersburg.
Swan, James H., St. Thomas.
Swartzwelder, James S., Mercersburg.
Thomas, Samuel B., Waynesboro.
Thrush, Ambrose W., Chambersburg.
Tunitzky, Leon J., Mont Alto.
Unger, David F., Mercersburg.

Weagly, Theodore H., Marion.
White, Thomas D., Orrstown.
Wright, Fairfax G., Chambersburg.

GREENE COUNTY SOCIETY.

(Organized June 26, 1883.)

President...Samuel H. Iams, Waynesburg.
V. Pres.....Samuel T. Williams, Waynesburg.
Secretary...Rufus E. Brock, Waynesburg.
Cor. Sec....Frank S. Ullom, Waynesburg.
Reporter....Thomas B. Hill, Waynesburg.
Treasurer...Stephen E. Wignet, Waynesburg.
Censors.....Harry C. Scott, Waynesburg.
James A. Knox, Waynesburg.
Charles W. Spragg, Waynesburg.
Com. on Pub. Policy and Legislation..Thomas N. Millikin, Waynesburg.
Lindsey S. McNeely, Kirby.

Stated meetings at Waynesburg the second Tuesday of each month. Also weekly meetings on Friday night for postgraduate study. Election of officers in October.

MEMBERS (16).

Blair, Thomas Lazear, Waynesburg.
Brock, Rufus Edward, Waynesburg.
Core, Amanda R., Whiteley.
Hill, Thomas Benton, Waynesburg.
Hoge, Smith Adamson, Rices Landing.
Iams, Samuel H., Waynesburg.
Knox, James Albert, Waynesburg.
Laidley, Edmund Wirt, Carmichaels.
McNeely, Lindsey S., Kirby.
Millikin, Thomas N., Waynesburg.
Norris, Robert Walton, Waynesburg.
Scott, Harry Chinsworth, Waynesburg.
Spragg, Charles William, Waynesburg.
Ullom, Frank Sellers, Waynesburg.
Wignet, Stephen E., Waynesburg.
Williams, Samuel T., Waynesburg.

HUNTINGDON COUNTY SOCIETY.

(Organized August 14, 1849. Reorganized April 9, 1872.)

President...Cloy G. Brumbaugh, Huntingdon.
V. Pres.....George W. Simpson, Mill Creek.
Secretary...John M. Beck, Alexandria.
Treasurer...George G. Harman, Huntingdon.
Reporter....J. M. Keichline, Jr., Petersburg.
Censors.....Fred P. Simpson, Mapleton Depot.
Harry B. Fetterhoof, Huntingdon.
William J. Campbell, Mt. Union.
Com. on Pub. Policy and Legislation..Henry Clay Chisolm, Huntingdon.
Frank L. Schum, Huntingdon.
Alfred J. Hamilton, Cassville.

Stated meetings in Huntingdon the second Thursday of each month at 1:30 P.M. Election of officers in December.

MEMBERS (38).

Banks, Clark W., Derry (Westmoreland Co.).
Beck, John M., Alexandria.
Black, Fred, Broad Top City.
Brumbaugh, Cloy G., Huntingdon.
Brumbaugh, Samuel Oscar, Huntingdon.
Bush, Charles B., 1433 Walnut St., Philadelphia Philadelphia Co.).
Campbell, Charles, Petersburg.
Campbell, Robert B., New Grenada (Fulton Co.).
Campbell, William J., Mt. Union.
Chisolm, Henry Clay, Huntingdon.
Decker, Raymond R., Orbisonia.
Evans, Micaiah R., Huntingdon.
Fetterhoof, Harry B., Huntingdon.
Frontz, Howard C., Huntingdon.
Green, Edward Houghton, Mill Creek.
Hamilton, Alfred J., Cassville.
Harman, George G., Huntingdon.
Heaton, William W., Saltillo.
Herkness, John S., Mount Union.
Horton, Harold G., Three Springs.
Johnston, James M., Huntingdon.
Keichline, John M., Jr., Petersburg.
Locke, Howard V., Orbisonia.
McCarthy, Alvin R., Mt. Union.
McClain, Charles A. Roe, Mt. Union.
McGarrah, Harry B., Robertsdale.
Moore, Robert Hall, Huntingdon.
Myers, Rudolph, Huntingdon.
Newlin, Gladys Wright, Huntingdon.
St. Clair, James R., Alexandria.
Schum, Frank L., Huntingdon.
Sears, William Hardin, Huntingdon.
Simpson, Fred P., Mapleton Depot.
Simpson, George W., Mill Creek.
Spangler, John Gilbert, Mapleton Depot.
Wilson, Harry C., Warriorsmark.
Wilson, Harry Sheridan, Huntingdon.
Wolfe, Lewis E., James Creek.

INDIANA COUNTY SOCIETY.

(Organized July 21, 1858.)

President...John A. Elkin, Creekside, R.D.
V. Pres.....Harry B. Neal, Indiana.
Secretary...William A. Simpson, Indiana.
Treasurer...Medus M. Davis, Indiana.
Reporter....Frederick W. St. Clair, Indiana.
Censors.....William E. Dodson, Indiana.
Harry B. Neal, Indiana.
William B. Ansley, Saltsburg.
Com. on Pub. Policy and Legislation..L. S. Clagett, Blairsville.
William H. Mix, Heilwood.
Alexander H. Stewart, Marion Center.

Stated meetings at 2:15 P.M. in Indiana at Y. M. C. A., second Tuesday of January, April, July, October. Special meetings at same place second Tuesday of February, March, May, June, August, September, November, December.

MEMBERS (55).

Alexander, Ray McElvey, Bolivar (Westm. Co.).
Ansley, William B., Saltsburg.
Boden, Todd R., R.D., McIntire.
Bryson, James A., Creekside.
Buterbaugh, Howard B., Indiana.
Carson, Jason W., Indiana.
Carson, John B., Blairsville.
Clagett, Luther S., Blairsville.
Clark, Albert W., Ernest.
Coe, Benjamin F., Clymer.
Davis, Medus M., Indiana.
Dodson, William E., Indiana.
Elkin, John A., Creekside, R.D.
Everwine, J. Merle, Clymer.
Fisher, James G., Plumville.
Gates, Dunn William, Indiana.
Gourley, John C., Windber (Somerset Co.).
Harmon, Clair G., West Lebanon.
Hileman, Elmer E., Hillsdale.
Johns, William, Brush Valley.
Kamerer, Samuel Alden, Smicksburg.
Keim, Albert L., Heilwood.
Kirk, Charles H., Homer City.
Lewis, E. Budd, Glen Campbell.

Lewis, Ray N., Livermore (Westmoreland Co.).
Lloyd, Harvey W., Starford.
Lytle, Ralph M., Saltsburg.
McFarlane, Joseph P., Vintondale.
McHenry, Ralph F., Windber (Somerset Co.).
Miller, J. S., Clymer.
Moore, Frank Fisher, Lucerne.
Neal, Harry B., Indiana.
Nix, William H., Heilwood.
Norton, Roy Roscce, Blairsville.
Onstott, Elmer E., Saltsburg.
Peterman, James H., Cherry Tree.
Reed, Charles Paul, Homer City.
Rink, Chas. E., Cor. 8th and Water Sts., Indiana.
Rutledge, Albert T., Blairsville.
St. Clair, John M., Indiana.
St. Clair, Frederick W., Indiana.
Salisbury, William John, Armagh.
Schall, Reuben Elmer, Arcadia.
Shields, William L., Kent.
Simpson, George E., Indiana.
Simpson, William A., Indiana.
Smith, Clark M., Plumville.
Smith, John Henry, Creekside.
Stephens, Thomas D., Penn Run.
Stewart, Alexander H., Marion Center.
Stewart, John M., Marion Center.
Sutton, M. Alva, Avonmore (Westmoreland Co.).
Ward, James, Lucerne Mines.
Weitzel, William F., Indiana.
Widdowson, William Charles, Black Lick.

JEFFERSON COUNTY SOCIETY.

(Organized September 11, 1877. Incorporated April 16, 1887.)

President...Russell C. Gourley, Punxsutawney.
V. Pres.....Thomas F. Nolan, Reynoldsville.
Harry B. King, Reynoldsville.
Sec., Treas. and Rept....Norman C. Mills, Big Run.
Censors.....Harry P. Thompson, Brookville, 3 yrs.
Abraham F. Balmer, Brookville, 2 yrs.
J. Buchanan Neale, Reynoldsville, 1 yr.
Com. on Pub. Policy and Legislation..William F. Beyer, Punxsutawney.
Russell C. Gourley, Punxsutawney.
John E. Grube, Punxsutawney.
Exec. Com..Russell C. Gourley, Punxsutawney.
Norman C. Mills, Big Run.
John H. Murray, Punxsutawney.
Prog. Com..Spencer M. Free, Dubois.
Ralph R. Jordan, Dubois.
Forest L. Schumacher, Dubois.

Stated meetings at Reynoldsville the second Thursday of each month at place determined by vote. Election of officers in January.

MEMBERS (65).

Allison, Harry W., Timblin.
Balmer, Abraham F., Brookville.
Benson, Francis L., Punxsutawney.
Benson, Joseph P., Punxsutawney.
Beyer, S. Meigs, Punxsutawney.
Beyer, William F., Punxsutawney.
Blacklock, Robert O., Eleanor.
Booher, Jay C., Falls Creek.
Borland, James C., Falls Creek (Clearfield Co.).
Bowser, Ira D., Reynoldsville.
Brown, John K., Brookville.
Davenport, Samuel M., Dubois (Clearfield Co.).
Ferman, John W., Luthersburg (Clearfield Co.).
Free, Spencer M., Dubois (Clearfield Co.).
Frye, J. Clarence, Williamsburg (Blair Co.).
Gourley, Harry R., Punxsutawney.
Gourley, Russell C., Punxsutawney.
Grube, John E., Punxsutawney.
Hamilton, Sylvester S., Punxsutawney.
Hall, Willis D., Wishaw.
Haven, James A., Brookville.
Hayes, Leo Z., Conifer.
Houck, Earl E., Dubois (Clearfield Co.).
Huff, Samuel R., Hazen.
Hughes, Edgar Lee, Helvetia (Clearfield Co.).
Humphreys, George H., Brockwayville.
Humphreys, Victor O., Brockwayville.
Johnstone, Charles W., Dubois (Clearfield Co.).
Jordan, Ralph Ross, Dubois (Clearfield Co.).
Kearney, J. Gardner, Anita.
Kelsea, William H., Soldier.
King, Harry B., Reynoldsville.
Lewis, Homer H., Penfield (Clearfield Co.).
Lorenzo, Frank A., Punxsutawney.
Lukehart, Joseph M., Rossiter (Indiana Co.).
McNeil, Arthur R., Coal Glen.
Maine, Charles L., Dubois (Clearfield Co.).
Matson, Walter W., Brookville.
Mills, Norman C., Big Run.
Mohney, Irvin R., Brookville.
Murray, John H., Punxsutawney.
Musser, Guy M., Punxsutawney.
Neale, J. Buchanan, Reynoldsville.
Newcome, John A., Vandergrift.
Newcome, William C., Big Run.
Nolan, Thomas F., Reynoldsville.
Pringle, Francis D., Punxsutawney.
Raine, James Frank, Sykesville.
Ritter, Daniel, Punxsutawney.
Sayers, John C., Reynoldsville.
Schumacher, Forest L., Dubois (Clearfield Co.).
Scott, Clinton H., Ramsaytown.
Shaffer, Phineas J., Rooms 301 & 302, All Nation's Bank Bldg., S. Twelfth and Carson Sts., Pittsburgh (Allegheny Co.).
Simpson, Alverdi J., Summerville.
Smathers, Francis C., Punxsutawney.
Snyder, Wayne L., Brookville.
Steiner, John G., Knoxdale.
Stevenson, Charles R., Delancey.
Thomas, David W., Force (Elk Co.).
Thompson, Harry P., Brookville.
Vosburg, Harry A., Jr., Tyler (Clearfield Co.).
Walters, Jacob A. Punxsutawney.
Whitehill, Alexander C., Brookville.
Williams, Thornton R., Punxsutawney.
Young, Roy L., Ludlow (McKean Co.).

JUNIATA COUNTY SOCIETY.

(Organized August 7, 1907.)

President...William H. Haines, Thompsontown.
V. Pres.....Amos W. Shelley, Port Royal.
Samuel F. Metz, Thompsontown.
Secretary...Brady F. Long, Mifflin.
Reporter....William H. Banks, Mifflintown.
Treasurer...Isaac G. Headings, McAlisterville.
Censors.....Amos W. Shelley, Port Royal.
William H. Haines, Thompsontown.
Com. on Pub. Policy and Legislation..William H. Banks, Mifflintown.
Brady F. Long, Mifflin.

Meetings held the first Wednesday of January, April, July and October at 1 P.M., in the Tuscarora Club Rooms, Mifflintown.

MEMBERS (11).

Banks, William H., Mifflintown.
Brown, Joseph Stewart, Okeson.
Haines, William H., Thompsontown.
Heading, James G., Port Royal.

Headings, Isaac G., McAlisterville.
Long, Brady F., Mifflin.
Metz, Samuel F., Thompsontown.
Quig, Robert M., East Waterford.
Ritter, Benjamin H., McCoysville.
Shelley, Amos W., Port Royal.
Willard, Herman F., Mexico.

LACKAWANNA COUNTY SOCIETY.

(Organized November 20, 1878.)

(Scranton is the post office when street address only is given.)

President...John J. Sullivan, Jr.,402 Wyoming Ave.
V. Pres.....William VanDoren, Archbald.
A. J. Winebrake, 608 N. Main Ave.
Sec.-Treas..H. W. Albertson, 2416 N. Main Ave.
Cor. Sec.
Reporter....Arthur E. Davis, 433 Wyoming Ave.
Librarian...F. P. Hollister, 508 Dime Bank Bldg.
Censors.....Herbert D. Gardner, Scranton Private Hosp., 1916.
J. P. Donahoe, 310 Wyoming Ave., 1917.
J. L. Rea, 1742 Sanderson Ave., 1918.
Com. on Pub. Policy and Legislation..W. R. Davies, 221 S. Main Ave.
T. B. Rodham, 1824 N. Main Ave.
F. J. Bishop, 801 Prescott Ave.
Daniel W. Evans, 157 South Main Ave.
Trustees....M. J. Williams, 302 S. Main Ave.
D. A. Capwell, 431 Wyoming Ave.
Frederick L. VanSickle, Olyphant.
Lowell M. Gates, 802 Mulberry St.
J. B. Corser, Scranton Private Hosp.

Regular weekly meetings are held Tuesday evenings at 8:45 in the society's rooms, Real Estate Building, 136 North Washington Ave., Scranton. Election of officers in January.

MEMBERS (130).

Albertson, Harry W., 2416 North Main Ave.
Anderson, U. Grant, Carbondale.
Arndt, Franklin F., 441 Wyoming Ave.
Baldwin, Harmon O., Peckville, R.D.
Bateson, John C., 1734 Jefferson Ave.
Beddoe, Benjamin G., 324 South Main Ave.
Berney, Daniel E., 616 Spruce St.
Bernstein, Arthur H., 1000 Webster Ave.
Bessey, Herman, 1805 Church St.
Bishop, Frederick J., 801 Prescott Ave.
Bryant, Frank G., 1107 Lafayette St.
Burns, Reed, 746 Jefferson Ave.
Butzner, John Decker, 506 Dime Bank Bldg.
Cantor, Aaron S., Dickson City.
Capwell, Daniel A., 431 Wyoming Ave.
Carlucci, Peter F., 231 Franklin Ave.
Chapin, David R., 1410 Mulberry St.
Connell, Alexander J., Connell Building.
Conway, William H., Olyphant.
Corser, John B., Scranton Private Hospital.
Cross, Friend A., 310 Dime Bank Bldg.
Davenport, Fred M., 827 Green Ridge St.
Davies, Philip J., 608 South Main Ave.
Davies, William Rowland, 221 S. Main Ave.
Davis, Arthur E., 433 Wyoming Ave.
Davis, Emlyn Thomas, Old Forge.
Dean, G. Edgar, 1548 Madison Ave.
Deantonio, Emilio, Box 68, 346 Franklin Ave.
DeMont, Charlotte, 357 Chestnut St., Dunmore.
Diefenderfer, Alan Lewis, Carbondale.
Donahoe, John P., 310 Wyoming Ave.
Downton, Ernest W., Starrucca (Wayne Co.).
Evans, Daniel W., 157 South Main Ave.
Falkowsky, Charles, Jr., 327 Spruce St.
Frey, Clarence Leslie, Dime Bank Building.
Fulton, William G., 433 Wyoming Ave.
Gardner, Herbert D., Scranton Private Hospital.
Gates, Lowell M., 802 Mulberry St.
Gibbons, Myles A., Dunmore.
Grant, John W., Carbondale.
Graves, Isaac S., Jermyn.
Hager, Albert E., Taylor.
Halpert, Henry, 317 Linden St.
Harper, James G., Carbondale.
Heston, Patrick J., 2602 Birney Ave.
Hollister, Frederick P., 508 Dime Bank Bldg.
Houser, John W., Taylor.
Jacob, James F., Throop.
Jenkins, David J., 234 South Main Ave.
Johnson, William S., Carbondale.
Kane, John F., Minooka.
Kay, Thomas W., 506 Dime Bank Bldg.
Kearney, Patrick H., 312 Wyoming Ave.
Keller, William Edwin, 435 Wyoming Ave.
Kennedy, Lucius Carter, 1030 Greenridge St.
Kiesel, Ernest L., 515 Lackawanna Ave.
Killeen, Thomas G., 856 Capouse Ave.
Knedler, J. Warren, Moscow.
Leopardi, Enrico Alfredo, Old Forge.
Lewis, James Davis, 204 West Market St.
Lindsay, George G., Connell Bldg.
Lloyd, Rossiter J., Olyphant.
Lowry, Welles J., Carbondale.
Lyons, John W., Jessup.
McGinty, Edward F., 415 Mulberry St.
McKeage, Robert B., Traders Bank Bldg.
MacDougall, William L., 216 Connell Bldg.
Manley, Peter C., 1326 Pittston Ave.
Martin, Thomas P., Mayfield.
Mears, Daniel W., Connell Building.
Moyer, Jacob C., Connell Building.
Murray, Gilbert D., Co. Savings Bank Bldg.
Murrin, Connell Edward, 732 Pittston Ave.
Myer, William W., Old Forge.
Newbury, Nelson E., 1515 Capouse Ave.
Noecker, Charles B., 216 Connell Building.
Noone, Michael J., 2060 North Main Ave.
O'Brien, J. Emmett, 741 Quincy Ave.
O'Connor, James J., Dickson City.
O'Dea, Patrick J., 169 South Main Ave.
O'Malley, John, 332 Jefferson Ave.
O'Toole, James E., 124 South Seventh St.
Peck, Welland A., 2604 North Main Ave.
Peet, Ernest L., 1917 North Main Ave.
Penticost, Milton I., Peckville.
Porteus, James S., 1009 South Main Ave.
Price, John C., Dept. of Labor and Industry, Harrisburg (Dauphin Co.).
Price, John J., Olyphant.
Rea, James L., 1742 Sanderson Ave.
Rea, James L., Jr., 1742 Sanderson Ave.
Redding, Leonard G., Dunmore.
Reedy, Walter M., 631 Connell Building.
Reifsnyder, Joseph C., Connell Building.
Ritz, Reinhart J., 715 North Main Ave.
Roberts, John J., 225 South Main Ave.
Robison, John I., 1526 Jackson St.
Rodham, Thomas B., 1824 North Main Ave.
Rohrbach, Harvey O., Mill City (Wyoming Co.).
Roos, Elias G., 232 Adams Ave.
Rudy, James P. H., 206 Dime Bank Bldg.
Rutherford, Thomas A., Clarks Summit.
Sedlack, Frank J., 950 Prescott Ave.
Severson, Irwin W., 217 North Main Ave.
Smith, Addison W., 930 Clay Ave.
Smith, Harry F., 1522 Myrtle St.
Stegner, Adam, Rendham.
Sturge, Edgar, 1200 Providence Road.
Sullivan, John J., 2006 Wayne Ave.
Sullivan, John J., Jr., 402 Wyoming Ave.
Szlupas, John, 1419 North Main Ave.

Thomas, Robert E., 1919 North Main Ave.
Thompson, James J., Carbondale.
Thomson, Charles E., Scranton Private Hosp.
Timlin, John J., Old Forge.
VanDoren, William, Archbald.
VanSickle, Frederick L., Olyphant.
Villoue, Joseph, 206 Chestnut St.
Wahl, John C., 507 Pittston Ave.
Wainwright, Jonathan M., Co. Savings Bank Bldg.
Wall, Russell T., 516 Spruce St.
Webb, Daniel A., 310 Wyoming Ave.
Wheelock, Frank R., 834 North Main Ave.
White, J. Norman, 349 South Main Ave.
Williams, Morgan J., 302 South Main Ave.
Wilson, John D., 225 Jefferson Ave.
Winebrake, Albert J., 608 North Main Ave.
Winters, Frank W., Dunmore.
Wormser, Bernard B., 213 Board of Trade Bldg.
Zeller, Charles A. Dalton.
Zychowicz, John F., 1315 Prospect Ave.

LANCASTER CITY AND COUNTY SOCIETY.

(Organized January 26, 1844. Incorporated April 15, 1844.)

(Lancaster is the post office when street address only is given.)

President...John L. Atlee, 129 East Orange St.
V. Pres.....George E. Day, Strasburg.
George B. Hershey, Gap.
Sec. and Treasurer...Horace C. Kinzer, 134 N. Duke St.
Reporter....Henry B. Davis, 241 E. King St.
Librarian...Frank G. Hartman, 136 N. Duke St.
Censors.....George W. Berntheizel, Columbia.
Jacob R. Lehman, Mountville.
John J. Newpher, Mount Joy.
Trustees....A. G. Bowman, 318 N. Duke St.
Lewis M. Bryson, Paradise.
J. Henry Musser, Lampeter.
Com. on Legal Affairs......Edgar J. Stein, Ch., 234 N. Duke St.
J. Miller Shartle, 26 South Prince St.
Walter D. Blankenship, 33 E. Walnut St.
Harry B. Roop, Columbia.
Thaddeus M. Rohrer, Quarryville.

Stated meetings in Malta Temple, 40 West King St., Lancaster, the first Wednesday of each month, at 2 P.M. Election of officers in January.

MEMBERS (141).

Achey, Frederick A., 133 East Walnut St.
Alexander, Guy Levis, Camden, N. J., P.R.R.
Alleman, Frank, 146 N. Prince St.
Appel, Theodore B., 305 N. Duke St.
Armstrong, James, Holtwood.
Atlee, John L., 129 East Orange St.
Baer, Walter K., 223 North Duke St.
Bair, Charles H., 419 Sta. St., Wilmerding (Allegheny Co.).
Barsumian, Hagop G., 205 East King St.
Berntheizel, George W., Columbia.
Bertram, Albert J., Quarryville.
Binkley, William G., Washingtonboro.
Bitzer, Newton E., 236 West Chestnut St.
Blankenship, Walter D., 33 East Walnut St.
Blough, Henry K., Elizabethtown.
Bolenius, Robert M., 48 South Queen St.
Bowman, Abraham G., 318 North Duke St.
Breneman, Park P., 146 East Walnut St.
Bricker, Elizabeth Bausman, Lititz.
Bryson, Howard R., 246 West Orange St.
Bryson, Lewis M., Paradise.
Cary, Dale Emerson, 135 North Duke St.
Davis, Henry B., 241 East King St.
Davis, Miles L., 114 North Prince St.
Day, George E., Strasburg.
Denlinger, Maurice M., Rohrerstown.
Dissler, Harry S., Denver.
Dunlap, J. Francis, Manheim.
Farmer, Clarence R., 573 West Lemon St.
Ferguson, Thomas Reed, Kirkwood.
Fox, William Garfield, 48 East Orange St.
Frew, George, Paradise.
Garretson, William, East Petersburg.
Garvey, Thomas Q., 443 W. Chestnut St.
Gerhard, Milton U., 43 South Prince St.
Good, Benjamin F., Millersville, R.D. 2.
Hamaker, William B., 137 N. Duke St.
Harter, G. Alvin, Maytown.
Hartman, Frank G., 136 North Duke St.
Hassenplug, Harry Gilmore, 226 East King St.
Heller, Samuel H., 10 North Mulberry St.
Helm, Amos H., New Providence.
Helm, Charles E., Bart.
Helm, John D., New Providence.
Henry, J. Albert, 428 Charlotte St.
Herr, Ambrose J., 441 College Ave.
Herr, Benjamin F., Millersville.
Herr, John T., Landisville.
Herr, William H., 226 North Duke St.
Herr, William M., 224 West Orange St.
Hershey, George Blair, Gap.
Hershey, Jacob D., Manheim.
Hertz, John L., Lititz.
Hess, Ammon Gross, Mountville.
Hess, William G., Greene.
Hostetter, Jacob E., Gap, R.D. 1.
Houston, Joseph W., 238 East King St.
Hurst, Michael W., Talmage.
Ilyus, Edmund B., 130 East Walnut St.
Ingram, Theodore E., Marietta.
Irwin, Thaddeus S., Christiana.
Kauffman, Walter L., Thornhurst (Lacka. Co.).
Kendig, Benjamin E., Salunga.
Kendig, Jerome S., Salunga.
Kennedy, Joseph P., Columbia.
Keylor, Walter N., Leacock.
Kinard, George C., Lincoln.
Kinard, George W., Leacock.
Kinard, John W., 129 North Duke St.
King, George P., 32 South Duke St.
Kinzer, Horace Clemens, 134 North Duke St.
Koser, Samuel B., Carlisle (Cumberland Co.).
Leaman, Adam E., West Willow.
Leaman, Walter J., Leaman Place.
Lefever, Willis Hess, Ephrata.
Lehman, Jacob R., Mountville.
Lenhardt, Elmer E., Millersville.
Leslie, LeRoy K., Bareville.
Lightner, Isaac Newton, Ephrata.
Long, Howard A., Brickerville.
Lowell, Francis Carroll, 32 North Prince St.
McCaa, David J., Ephrata.
McCaskey, Donald, Witmer.
McCormick, Daniel R., 22 South Prince St.
Markel, Chester F., Columbia.
Martin, Daniel Webster, Manheim.
Martin, Dwight C., Lititz.
Martin, John R. B., Gap.
Martin, John R. S., Christiana.
Mentzer, John F., Ephrata.
Miller, Samuel W., 217 East King St.
Mowery, Harry A., Marietta.
Mowery, Jacob L., 302 West Orange St.
Musser, J. Henry, Lampeter.
Mylin, Walter F., Intercourse.
Netcher, Charles E., 46 North Prince St.
Newpher, John J., Mount Joy.
Noble, Edward I., 145 North Duke St.
Pomerantz, Harry, 17 East Walnut St.

Posey, Silas Robert, Lititz.
Reed, Joseph A. E., 644 West Chestnut St.
Reemsnyder, Byron J., Ephrata, R.D. 3.
Reeser, Richard, Columbia.
Ressler, Jacob L., Bird-in-hand.
Ringwalt, Martin, Rohrerstown.
Roebuck, J. Paul, 233 North Duke St.
Rohrer, George R., 45 East Orange St.
Rohrer, Thaddeus M., Quarryville.
Roop, Claude D., County Hospital, Lancaster.
Roop, Harry B., Columbia.
Schaeffer, Peter F., Christiana.
Schowalter, Henry C. W., New Holland.
Shartle, J. Miller, 26 South Prince St.
Shear, Lewis M., 601 Manor St.
Shookers, Tobias C., Lancaster.
Smith, James Augustus, Reamstown.
Snavely, Harry B., 41 West Orange St.
Snyder, Asher F., Mt. Joy.
Stahr, Charles P., 139 East Walnut St.
Stein, Edgar J., 234 North Duke St.
Stever, John C., Bainbridge.
Steward, William J., Spring City (Chester Co.).
Stubbs, Ambrose H., Peach Bottom.
Sultzbach, Henry Miller, 231 East King St.
Thome, William B., Elizabethtown.
Thome, Winfield M., Mount Joy.
Tinney, William Scott, Strasburg.
Treichler, Vere, Elizabethtown.
Trexler, Jacob F., 134 North Prince St.
Truxal, Cyrus W., Lancaster.
Walter, Adam V., Brownstown.
Walter, Henry, Rothsville.
Wenger, John M., Terre Hill.
Wentz, Paul R., New Holland.
Winters, John L., Blue Ball.
Witmer, Charles Howard, 13 East Walnut St.
Witmer, Elias H., Neffsville.
Witmer, Frank B., Lebanon (Lebanon Co.).
Yoder, Mahlon Harold, Lititz.
Yost, John W., Bethesda.
Ziegler, James P., Mount Joy.

LAWRENCE COUNTY SOCIETY.

(Reorganized October 7, 1897.)

President...Robert G. Boak, New Castle.
V. Pres.....Floyd Lee VanWert, New Castle.
Perry S. Gaston, New Castle.
Sec. and
Reporter....William A. Womer, New Castle.
Treasurer...Samuel W. Perry, New Castle.
Censors.....John Foster, New Castle.
Walter L. Campbell, New Castle.
Robert G. Miles, New Castle.
Com. on Pub.
Policy and
Legislation..Loyal W. Wilson, New Castle.
Don C. Lindley, New Castle.

Society meets in Society Room in Greer Block, New Castle, on the first Thursday of every month at 8:30 P.M. Election of officers in January.

MEMBERS (53).

Autenreith, William Clifford, Bessemer.
Berger, Benjamin Morris, New Castle.
Blackwood, James M., New Castle.
Boak, Robert G., New Castle.
Burchfield, William Clinton, New Castle.
Campbell, Walter L., New Castle.
Cleland, William D., New Castle, R.D.
Clark, William A., Jr., New Wilmington.
Cooper, Jesse R., New Castle.
Davidson, William J., New Castle.
Dean, Hollis G., New Castle.
Douthett, James C. B., Pulaski.
Flannery, Charles F., New Castle.
Foster, John, New Castle.
Gageby, Lenore H., New Castle.
Gaston, Perry S., New Castle.
Guy, Franklin W., New Castle.
Harper, H. Cyrus, New Castle.
Helling, Henry Ellwood, Ellwood City.
Hunt, Charles B., New Castle.
Iseman, Charles M., New Castle.
Kaplan, Eliah, New Castle.
Lindley Don C., New Castle.
McComb, Edwin C., New Castle.
McCune, Samuel R., New Castle.
McDowell, C. Fenwick, New Castle.
McLaughry, Elizabeth M., New Castle.
Miles, Robert G., New Castle.
Mitchell, Henry C., Edinburg.
Perry, Samuel W., New Castle.
Pollock, James K., New Castle.
Popp, James M., New Castle.
Porter, Cassius M., New Castle, R.D.
Reed, Charles A., New Castle.
Sankey, Brant E., New Castle.
Shaffer, Thomas M., New Castle.
Smyser, Charles J., New Wilmington.
Snyder, Ernest Ulysses, Portersville (Butler Co.).
Steen, William L., New Castle.
Trainor, Charles Edwin, New Castle.
Tucker, John D., New Castle.
Urey, Frank F., 208 Liberty St., New Castle.
Urmson, Allan W., New Castle.
VanWert, Floyd Lee, New Castle.
Vosler, David C., Ellwood City.
Wagner, Frederick M., Wampum.
Wagner, Victor C., West Pittsburgh.
Wallace, Robert A., New Castle.
Williams, Thomas V., New Castle.
Wilson, Harry R., New Castle.
Wilson, Loyal W., New Castle.
Womer, William A., New Castle.
Zerner, H. Elmore, New Castle.

LEBANON COUNTY SOCIETY.

(Organized March, 1847.)

President...Albert S. Reiter, Myerstown.
V. Pres.....Seth Light, Lebanon.
Walter H. Brubaker, Lebanon.
Secretary...Charles M. Strickler, Lebanon.
Treasurer...Harvey E. Maulfair, Lebanon.
Reporter....G. R. Pretz, Lebanon.
Censors.....William M. Guilford, Lebanon.
W. R. Roedel, Lebanon.
John C. Bucher, Lebanon.
Com. on Pub.
Policy and
Legislation..Samuel P. Heilman, Lebanon.
William M. Guilford, Lebanon.
Samuel Z. Shope, Harrisburg.
Warren F. Klein, Lebanon.
Thomas R. Holland, Lebanon.
David S. Bordner, Palmyra.

Stated meetings the second Tuesday of each month at 2:30 P.M., Grand Jury Room, Court House, Lebanon. Election of officers in January.

MEMBERS (29).

Bashore, Simeon D., Palmyra.
Beattie, John, 4th and Cumberland Sts., Lebanon.
Beckley, Joseph R., Lebanon.
Bordner, David Stanton, Palmyra.
Brubaker, Walter H., Lebanon.
Bucher, John C., Lebanon.
Gingrich, Edward H., 511 Cumberland St., Lebanon.
Guilford, William M., Lebanon.
Heilman, Samuel P., Lebanon.

Holland, Thomas R., Lebanon.
Kerr, J. DeWitt, Lebanon.
Klein, Warren F., Lebanon.
Kurr, Thomas A., Fredericksburg.
Light, John J., Lebanon.
Light, Seth, 604 Cumberland St., Lebanon.
Maulfair. Harvey E., Lebanon.
Miller J. Harvey, 19 N. Fourth St., Harrisburg (Dauphin Co.).
Pretz, Georeg R., 815 Lehman St., Lebanon.
Rank, David M., Annville.
Reiter. Albert S., Myerstown.
Roedel, Henry H., Lebanon.
Roedel, William R., Lebanon.
Saylor, Clyde, Lebanon.
Sherger, John A., 1809 North Sixth St., Harrisburg (Dauphin Co.).
Shope. Samuel Z., 610 N. Third St., Harrisburg (Dauphin Co.).
Strickler, Charles M., Lebanon.
Walter, John, Lebanon
Weiss, Alfred S., 630 Chestnut St., Lebanon.
Zimmerman, Frank D., Schaefferstown.

LEHIGH COUNTY SOCIETY.

(Organized 1850.)

(Allentown is the post office when street address only is given.)

President...Charles A. Haff, Siegfried.
V. Pres.....F. A. Fetherolf, 941 Hamilton St.
C. H. Schlesman, 216 North Seventh St.
Secretary...J. Treichler Butz, 304 N. Ninth St.
Treasurer...F. G. Schaeffer, 143 N. Eighth St.
Reporter....Willard D. Kline, 24 N. Eighth St.
Librarian...William F. Herbst, 28 N. Fifth St.
Censors.....Wm. A. Hausman,Jr., 1116 Hamilton St.
H. T. M. Ritter, 101 N. Eleventh St.
John D. Matz, 40 N. Eighth St.
Com. on Pub. Policy and Legislation..N. C. E. Guth, 527 Liberty St.
Frank S. Boyer, 16 N. Second St.
T. H. Weaber, 211 N. Eighth St.

Stated meetings at the Administration Building, South Penn St., Allentown, on the second Tuesday of each month at 2:30 P.M. Election of officers in January.

MEMBERS (85).

Albright, Roderick E., 135 South Fifth St.
Arner, Quintin D., 18 South Thirteenth St.
Bachman, Wilbur A., South Allentown.
Backenstoe, Martin J., Emaus.
Backenstoe, William A., Emaus.
Bausch, Frederick R., 109 North Second St.
Bean, Harvey F., Mountainville.
Boyer, Frank S., 16 North Second St.
Boyer, George H., 528 North Sixth St.
Butz, J. Treichler, 304 North Ninth St.
Dickenshied, Eugene H., 1030 Walnut St.
Eckert, John T., 438 North Sixth St.
Erb, Horace B., 225 North Twelfth St.
Erdman, Howard B., Macungie.
Erdman, J. Dallas, 728 North Seventh St.
Erdman, William B., Macungie.
Eshbach, William W., 520 Union St.
Feldhoff, Edward W., 1224 Turner St.
Fetherolf, Frederick A., 941 Hamilton St.
Fogel, Solon C. B., 36 North Twelfth St.
Gangeware, Victor, Rittersville.
Gearhart, Ethan J., 341 Ridge Ave.
Gerberich, Arthur F., Limeport.
Guth, Nathaniel C. E., 527 Liberty St.
Haas, Milton J., 1353 Chew St.
Haff, Charles A., Siegfried (Northampton Co.).
Hartzell, William H., 22 North Eighth St.
Hausman, William A., Jr., 1116 Hamilton St.
Hendricks, Augustus W., 453 North Sixth St.
Henry, Charles O., 102 North Tenth St.
Herbst, William Frederick, 28 North Fifth St.
Hertz, William J., 125 North Eighth St.
Holben, Franklin J., Schnecksville.
Hornbeck, James L., Catasauqua.
Huebner, Irwin F., 802 Walnut St.
Jenkins, William S., 116 North Second St.
Jordan, Henry D., 544 North Sixth St.
Keim, Charles J., Catasauqua.
Keim, Harry J. S., Catasauqua.
Kern, Alvin J., Slatington.
Kern, Harrison B., Slatington.
King, Robert C., Hellertown (Northamp. Co.).
Kistler, Jesse G., 1615 Chew St.
Kistler, Nelson F., 206 North Ninth St.
Kleppinger, Warren David, 17th & Chew Sts.
Kline, Willard D., 24 North Eighth St.
Klingaman, Harry E., Emaus.
Kress, Palmer J., 24 South Seventh St.
Lawall, Griffith S., 534 North Sixth St.
Lowright, James Harvey, Center Valley.
Lowright, Wallace J., Center Valley.
McAvoy, Jeremiah F., Catasauqua.
Matz, John D., 40 North Eighth St.
Mickley, Howard P., Neffs.
Miller, Albert N., East Texas.
Miller, Mahlon G., Siegfried (Northamp. Co.).
Minner, J. Edwin S., Egypt.
Mohr, Eugene H., Alburtis.
Morgan, Robert D., Slatington.
Muschlitz, Charles H., Slatington.
Otto, Calvin J., 130 North Seventh St.
Parmet, David H., 309 North Second St.
Paul, James H., West Auburn (Susq. Co.).
Quinn, Sydney A., 753 North Sixth St.
Peters, R. Cornelius, 406 North Eighth St.
Rieche, Otto C., Marshall Field Bldg., Chicago, Ill.
Riegel, Henry H., Catasauqua.
Riegel, William A., Catasauqua.
Ritter, Hope T. M., 101 North Eleventh St.
Schaeffer, Charles D., 28 North Eighth St.
Schaeffer, Forrest G., 143 North Eighth St.
Schaeffer, Robert L., 30 North Eighth St.
Scheirer, Franklin B., 402 North Sixth St.
Schlesman, Charles H., 216 North Seventh St.
Seiberling, Fred C., 945 Walnut St.
Seiberling, George F., 956 Hamilton St.
Smith, James S., 348 North Ninth St.
Sowden, Edgar L., Slatedale.
Trexler, William B., Fullerton.
Troxell, William C., 502 North Second St.
Weaber, Thomas H., 211 North Eighth St.
Weaver, Aaron D., Old Zionsville.
Weaver, Joseph M., 947 Walnut St.
Weida, Isadore J., Emaus.
Wentz, Frank R., 317 North Tenth St.

LUZERNE COUNTY SOCIETY.

(Organized March 4, 1861.)

(Wilkes-Barre is the post office when street address only is given.)

President...Harry L. Whitney, Plymouth.
V. Pres.....R. P. Taylor, 25 S. Washington St.
Secretary...E. U. Buckman, 70 S. Franklin St.
Fin. Sec.....Marshall C. Rumbaugh, Kingston.
Treasurer...William J. Davis, 225 Barney St.
Reporter....W. H. Corrigan, 141 S. Washington St.
Censors.....Boyd Dodson, 186 Dana St.
Sanford L. Underwood, Pittston.
J. E. Scheifly, Kingston.
Ed. of Transactions........Lewis H. Taylor, 83 S. Franklin St.

Directors...W. S. Stewart, 98 S. Franklin St.
W. H. Faulds, Kingston.
G. W. Guthrie, 109 S. Franklin St.

Stated meetings in Society's Building, South Franklin St., Wilkes-Barre, first and third Wednesdays of each month at 8:30 P.M. Election of officers last meeting in December.

MEMBERS (178).

Adams, Erick A., Dana St.
Ahlborn, Maurice B., 99 North Franklin St.
Andreas, George R., 204 East South St.
Ashley, Charles L., Plymouth.
Barney, Delbert, 55 North Washington St.
Barton, A. Arthur, Plains.
Barton, Milton Arthur, Plains.
Beaver, James R., West Pittston.
Becker, Conrad J., 679 Hazle St.
Bennett, Clarence E., Nanticoke.
Berge, William H., Avoca.
Bixby, Edward W., 315 South River St.
Blair, Lovisa Ida., 342 South River St.
Briggs, Miron L., Shickshinny.
Brooks, Allan C., 84 North Franklin St.
Brooks, James, Plains.
Brosius, Peter F., Hazleton.
Brown, Harry A., Lehman.
Brundage, Frank M., Conyngham.
Buckley, Ralph Emerson, 143 N. Church St., Hazleton.
Buckman, Ernest U., 70 South Franklin St.
Burkhardt, George F., Drums.
Caffrey, Anthony Joseph, 311 S. Washington St.
Carr, George W., 30 South Franklin St.
Carter. William S., 15 W. Broad St., Hazleton.
Collins, Daniel W., 27 East South St.
Connole, John F., 107 E. Main St., Plymouth.
Corrigan, John J., 336 W. Broad St., Hazleton.
Corrigan, William H., 141 S. Washington St.
Creasy, Raymond C., 71 S. Washington St.
Cressler, John Webster, 59 Barney St.
Dailey, Thomas J., 15½ Main St., Plymouth.
Danzer, William F., Hazleton.
Davis, Walter, 24 South Washington St.
Davis, William J., 225 Barney St.
Davison, William F., Kingston.
Deibel, Henry W., 119 Academy St.
Dessen, Louis A., 26 W. Diamond St., Hazleton.
Dickinson, Charles S., Freeland.
Dodson, Boyd, 186 Dana St.
Dodson, Daniel W., Nanticoke.
Doolittle, Edgar B., Hazleton.
Dougherty, Edward S., 41 North Main St., Ashley.
Dougherty, Joseph P., 9 Ashley St., Ashley.
Drake. George R., Plymouth.
Dreibelbies, Wilmer Clayton, 324 Carey Ave.
Dyson, John R., Hazleton.
Edwards, Lewis, 790 Market St., Kingston.
Edwards, Vivian P., 539 Main St., Edwardsville.
Ernst, Charles H., 55 Hanover St.
Everett, Shem A., Freeland.
Farrar, John K., Audenried (Carbon Co.).
Faulds, Wm. H., 467 Wyoming Ave., Kingston.
Fischer, Herman A., 311 S. Washington St.
Fleming, John C., Dallas.
Fleming, Thomas F., Pittston.
Foss, Walter B., 36 North Main St., Ashley.
Freeman, Stanley L., H. & W. Bldg., S. Main St.
Gagion, Thomas Reed, 150 S. Washington St.
Gaughan, Martin C., Pittston.
Geist, James W., 529 South Franklin St.
Gibby, Harold J., Pittston.
Gibby, Herbert B., 96 South Franklin St.
Gorman, Peter J., 18 N. Main St., Pittston.
Griffith, Morgan E., 528 Carey Ave.
Groblewski, Casimir C., 20 Elm St., Plymouth.
Grover, Alfred Woodward, 256 Maple St., Kingston.
Guthrie, George W., 109 South Franklin St.
Guthrie, Malcolm C., 109 South Franklin St.
Hanlon, Edward F., 158 N. Wyoming St., Hazleton.
Harrington, George W., 544 N. Vine St., Hazleton.
Hartman, William L., Pittston.
Heyer, Edward G., Nanticoke.
Hinrichs, August G., Pittston.
Hoffman, George L., 1110 Wyoming Ave., Kingston.
Howell, Gideon L., Trucksville.
Howell, John T., 84 North Main St.
Howorth, John, 17 E. North St.
Huebner, Dewees A., Fern Glen.
Jacobsky, Cyrus, 211 South Main St.
James, Thomas A., 35 North Main St., Ashley.
Jennings, Joseph A., Pittston.
Kaufman, Albert, 51 North Washington St.
Keller, Harry M., Hazleton.
Kenny, John A., 504-6 Miners Bank Building.
Kingsbury, Dana W., Nanticoke.
Kirschner, John W., 63 Main St., Luzerne.
Kistler, Oliver F., 43 North Franklin St.
Knapp, Charles P., 270 Wyoming Ave., Wyoming.
Kochczynski, Joseph C., Hazleton.
Kocyan, Joseph J., Plains.
Koons, Robert O., Conyngham.
Kosek, Frank J., 447 N. Main St.
Krajewski, Frank J., 46 S. Washington St.
Laing, Henry M., Dallas.
Lake, David H., 137 Maple St., Kingston.
Lance, Ruth Mitchell, 44 Reynolds St., Kingston.
Lathrop, Walter, Hazleton.
Lenahan, Frank P., 55 South Washington St.
Lenahan, Hugh J., Pittston.
Long, Charles, 33 South Washington St.
Long, Charles A., Hunlock Creek.
Longshore, William R., Hazleton.
McClintock, Andrew T., 44 South River St.
McConnon, George H., 246 East Northampton St.
McGuire, William J., 357 East South St.
McHugh, John J., Parsons.
McLaughlin, Patrick A., 214 Chestnut St., Kingston.
Mahon, John B., Pittston.
Marvin, Merton E., 19 Main St., Luzerne.
Matlack, Granville T., 33 W. Northampton St.
Mayock, Peter P., 49 South Washington St.
Meixell, Edwin W., 25 West Ross St.
Mengel, Samuel P., 64 N. Franklin St.
Meyers, Elmer L., 239 South Franklin St.
Miner, Charles H., 115 South Franklin St.
Molinelli, John H., Pittston.
Moore, Charles E., Alden Station.
Morgan, Aston H., 361 East Market St.
Mundy, Leo C., 402 Scott St.
Murray, Michael A., 243 S. Washington St.
Myers, N. Ray, Wanamie.
Neale, Henry M., Upper Lehigh.
Newth, John H., Pittston.
Norstedt, Johann A., Nanticoke.
Nurse, Charles T. C., 18 East Jackson St.
Perry, George B., R.D. No. 3, Dallas.
Prevost, Clarence W., Pittston.
Redelin, Albert Augustus, Freeland.
Reed, Marvin Warren, 31 South Washington St.
Reese, William C., 21 West Ross St.
Richards, Emrys, 173½ N. Main St.
Robinhold. Daniel G., 1170 Wyoming Ave., Kingston.
Roderick, Edward R., 92 South Franklin St.
Roe, J. Irving, 34 North Washington St.
Rogers, Lewis Leonidas, Jr., 268-270 Wyoming Ave., Kingston.
Ross, Nathaniel, 141 Hanover St.
Rubenstein, Harry, Pittston.
Rumbaugh, Marshall Cloyd, 618 Wyoming Ave., Kingston.
Rynkiewicz, Stanley H., 449 Main St., Kingston.
Schappert, N. Louis, 57 South Washington St.
Scheifly, John E., 284 Wyoming Ave., Kingston.

Shafer, Charles Layton, 219 College Ave., Kingston.
Sheridan, Lawrence A., 421 North Main St.
Sickler, Parke C., 90 Academy St.
Smith, A. Burton, Wyoming.
Smith, Lawrence H., Hazleton.
Smith, W. Clive, 132 South Franklin St.
Smurl, James A. M., Kingston.
Stewart, Walter S., 98 South Franklin St.
Stiff, William Clifton, Plymouth.
Stoeckel, Louise M., N. Franklin and Union Sts.
Storz, John C., Luzerne.
Stricker, William B., Nanticoke.
Taylor, Lewis H., 83 South Franklin St.
Taylor, Richard P., 25 South Washington St.
Templeton, Harry G., Plymouth.
Thompson, James R., Pittston.
Thompson, Laurance Mills, 567 Wyoming Ave., Kingston.
Tobias, John B., 305 E. Northampton St.
Trapold, August, 239 S. Washington St.
Tressler, Charles W., Shickshinny.
Truckenmiller, Roy, Freeland.
Underwood, Sanford L., Pittston.
Wadhams, Raymond L., 72 North Franklin St.
Wagner, Earl E., 207 Parrish St.
Wagner, Edward C. O., 125 S. Washington St.
Waters, William W., Nanticoke.
Wetherby, Benedict J., 69 W. Union St.
Wetherby, Della P., 69 W. Union St.
Whitney, Harry LeRoy, Plymouth.
Wilcox, Homer B., 165 Maple St., Kingston.
Williams, Evan, Sugar Notch.
Williams, Jas. T., The Radnor, 63 S. Washington St.
Woehrle, Robert S., 403 George Ave., Parsons.
Wolfe, Samuel M., 127 Academy St.
Wyckoff, Sarah Delia, 68 West South St.
Yeager, Clark Harvey, 339 S. Main St., Plymouth.

LYCOMING COUNTY SOCIETY.

(Organized 1849.)

(Williamsport is the post office when street address only is given.)

President...H. M. Ritter, 21 W. Third St.
V. Pres.....G. C. Davis, Milton (Northum. Co.).
Charles J. Cummings, 755 W. Fourth St.
Secretary...Robert F. Trainer, 310 Elmira St.
Treasurer...John P. Harley, 106 E. Fourth St.
Rep. and Librarian...Wesley F. Kunkle, 519 Seventh Ave.
Censors.....H. G. McCormick, 430 W. Fourth St.
C. W. Youngman, 601 Pine St.
G. Franklin Bell, Newberry.
E. Lyon, 24 West Fourth St.
John A. Klump, 331 Elmira St.
Trustees....Waldo W. Hull, 626 West Third St.
H. M. Ritter, 21 W. Third St.
Robert F. Trainer, 310 Elmira St.
Alem P. Hull, Montgomery.
John P. Harley, 106 East Fourth St.
Com. on Pub. Policy and Legislation..H. G. McCormick, 430 West Fourth St.
Robert F. Trainer, 310 Elmira St.
H. M. Ritter, 21 W. Third St.

Stated meetings at City Hospital, Williamsport, second Friday of each month at 2 P.M. Annual meeting in January.

MEMBERS (100).

Adams, Charles M., 1025 West Fourth St.
Adams, F. Raymond, Watsontown (Northum. Co.).
Albright, Joseph W., Muncy.
Bastian, Charles B., 48 West Fourth St.
Beach, John D., 225 Market St.
Bell, G. Franklin, 821 Diamond St., Newberry.
Bingaman, C. E., Palmerton (Carbon Co.).
Born, Reuben H., Montoursville.
Brenholtz, William S., 215 East Third St.
Brown, John C., 35 West Fourth St.
Bush, Irwin R., Letonia (Tioga Co.).
Campbell, Eugene B., 42 West Fourth St.
Campbell, John A., 838 Funston Ave., Newberry.
Castlebury, Alzine M., 945 Campbell St.
Castlebury, Frank Fullmer, Roaring Branch.
Chaapel, Victor P., 2017 W. Fourth St., Newberry.
Clinger, Joseph A., Milton (Northum. Co.).
Collier, Martin H., 238 Pine St.
Cotton, Julia C., Greystone Park, N. J.
Cummings, Charles J., 755 West Fourth St.
Davis, George C., Milton (Northumberland Co.).
Delaney, William E., 942 West Third St.
Derr, Joseph L., Lairdsville.
Donaldson, Harry J., 106 East Fourth St.
Dougal, James S., Milton (Northumberland Co.).
Drick, George R., 106 East Fourth St.
Dye, Adelbert D., 250 Pine St.
Ecroyd, Henry, Muncy.
Everett, Edward, Millville (Columbia Co.).
Fisher, John H., 254 Pine St.
Follmer, William H., 323 Elmira St.
Fulmer, Joseph Cleveland, 1116 East Third St.
Glosser, William E., 440 Market St.
Goodman, Lee M., Jersey Shore.
Gordner, J. Frank, Montgomery.
Hardt, Albert F., 414 Pine St.
Harley, John P., 106 East Fourth St.
Haskin, Herbert P., 324 High St.
Hayes, Randall B., 1225 Allegheny St., Jersey Shore.
Heller, Charles E., 214 East Third St.
Hull, Alem P., Montgomery.
Hull, Elmer S., Montgomery.
Hull, Waldo W., 626 West Third St.
King, William L., Muncy.
Klump, George B., 430 Pine St.
Klump, John A., 331 Elmira St.
Konkle, W. Bastian, Montoursville.
Kunkle, Wesley F., 519 Seventh Ave.
Lamade, Albert C., 42 East Fourth St.
Langley, Louis Elsworth, 3 W. Market Sq.
Lehman, Charles H., 831 Diamond St.
Logue, William P., 240 Pine St.
Lyon, Edward, 24 West Fourth St.
McCormick, Horace G., 430 West Fourth St.
Mansuy, J. Louis, Ralston.
Marsh, William G., Watsontown (Northum. Co.).
Mench, Martin L., Jersey Shore.
Metzgar, George W., Hughesville.
Miller, William H., 18 East Third St.
Milnor, Robert H., Warrensville.
Mohn, Charles L., Jersey Shore.
Mosher, James S., Picture Rocks.
Nevling, Ferdinand S., Clearfield (Clearfield Co.).
Norris, Franklin J., 40 Southern Ave., South Williamsport.
Nutt, John B., 440 Pine St.
Persing, Amos V., Allenwood (Union Co.).
Poust, G. Alvin, Hughesville.
Rank, Lee Russell, Milton (Northum. Co.).
Raper, Thomas W., 20 West Fourth St.
Reilly, Peter C., 229 Market St.
Rewalt, Robert K., 25 West Third St.
Reynolds, Walter B., 421 First Ave.
Ritter, Ella N., 1211 West Fourth St.
Ritter, George T., First Nat. Bank Bldg.
Ritter, H. Murray, 21 W. Third St.
Ritter, James W., Jersey Shore.
Rote, William H., 51 West Third St.
Sanford, Frederick G., Jersey Shore.
Schaefer, J. Elmer, Cogan Station.
Schneider, Charles, 1501 Southern Ave.
Schneider, George L., 16 West Third St.

Senn, Carl H., 443 Market St.
Senn, John, 247 Washington St.
Senn, Walter W., King Fisher, Oklahoma.
Shaw, Clarence E., 37 West Fourth St.
Shindel, William L., Sunbury (Northum. Co.).
Shuman, Warren N., Jersey Shore.
Steans, Ralph, Lewisburg (Union Co.).
Stickel, Jacob, 714 West Fourth St.
Stroble, Walter G., Liberty (Tioga Co.).
Thornton, Thomas C., Lewisburg (Union Co.).
Trainer, Robert F., 310 Elmira St.
Truckenmiller, Wm. U., Allenwood (Union Co.).
Tule, R. Bruce, 115 Elm St., Milton (Northum. Co.).
Voorhees, Charles D., Hughesville.
Wackenhuth, Charles F., Picture Rocks.
Weigle, Henry S., Muncy.
Welker, Abraham T., Collomsville.
Wood, T. Kenneth, Muncy.
Youngman, Charles W., 601 Pine St.

McKEAN COUNTY SOCIETY.

(Organized June 18, 1880.)

President...Burg Chadwick, Smethport.
V. Pres.....William C. Hogan, Bradford.
Sec., Treas.
and Rept....James Johnston, Bradford.
Censors.....Bret H. Hall, Bradford.
Harris A. Canfield, Bradford.
Henry L. McCoy, Smethport.
Com. on Pub.
Policy and
Legislation..William A. Ostrander, Smethport.
A. Miner Straight, Bradford.
William P. Burdick, Kane.

Stated meetings at place selected the first Tuesday of each month. Election of officers in January.

MEMBERS (49).

Armstrong, William J., Kane.
Ash, Dunham E., 1 Main St., Bradford.
Ash, Garrett G., Bradford.
Benninghoff, George E., Bradford.
Burdick, William P., Kane.
Canfield, Harris A., Bradford.
Chadwick, Burg, Smethport.
Clark, John, Smethport.
Cleveland, Howard Martin, Mt. Jewett.
Cox, Milo W., Kane.
Cummings, George M., Betula.
Dana, Lawrence W., Kane.
Eaman, Howard K., Hazel Hurst.
Egbert, Rufus A., Custer City.
Fredericks, William J., Bradford.
Glenn, Thomas O., Bradford.
Haines, Samuel H., Bradford.
Hall, Bret H., Bradford.
Hamilton, Robert, Smethport.
Hannum, Oscar S., Bradford.
Hayes, Mary J., Kane.
Heimbach, James M., Kane.
Hogan, William C., Bradford.
Howe, Llewellyn O., Bradford.
Johnson, Frederick C., Mont Alto (Franklin Co.).
Johnston, James, Bradford.
Joseph, Louis Daniel, Bradford.
Kane, Evan O., Kane.
Kane, Thomas L., Kane.
Kunkel, Oscar F., Bells Camp.
McCoy, Henry L., Smethport.
McGraner, W. J., Port Allegany.
McLean, Earle McCormack, Eldred.
Monagan, William H., Mt. Alton.
Moyer, Walter S., Rixford.
Nichols, Henry James, Bradford.
Ostrander, William A., Smethport.
Paton, Fred Wade, Bradford.
Robison, Joseph H., Bradford.
Russell, Reister K., Bradford.
Stewart, James B., Bradford.
Straight, A. Miner, Bradford.
Straight, Persis Rosamond, Bradford.
VanSlyke, Allan A., Mt. Jewett.
White, Benjamin Franklin, Jr., Bradford.
Wilson, Homer A., Duke Center.
Winger, Frederick W., Bradford.
Winslow, Harry Charles, Norwich.
Woodhead, H. Irvin, Bradford.

MERCER COUNTY SOCIETY.

(Organized 1848.)

President...Arthur A. Parks, Fredonia.
V. Pres.....Edwin M. McConnell, Grove City.
B. Edwin Mossman, Jr., Greenville.
Sec. and
Reporter....Patrick E. Biggins, Sharpsville.
Treasurer...Addison E. Cattron, Sharpsville.
Censors.....J. H. Twitmyer, Sharpsville, 1 yr.
E. M. McConnell, Grove City, 2 yrs.
Clifford Marshall, Sharon, 3 yrs.
Com. on Pub.
Policy and
Legislation..John M. Martin, Grove City.
Clarence W. McElhaney, Greenville.
William W. Richardson, Mercer.

Stated meetings second Thursday in January, March, May, July, September and November at such place as society shall direct. Election of officers in January.

MEMBERS (70).

Bachop, John C., Sheakleyville.
Bailey, Carl, Jamestown.
Bakewell, Frank S., Greenville.
Barnes, Matthew A., Pardoe.
Batteiger, Frederick O., Greenville.
Berryhill, William G., Cushing, Okla.
Biggins, Patrick E., Sharpsville.
Bleakney, Frank, Grove City.
Breene, Lawrence N., Farrell.
Brown, David A., Greenville.
Brown, Robert W., Greenville.
Campbell, Watson E., Sharon.
Cattron, Addison E., Sharpsville.
Cheesman, John C., Grove City.
Cooley, Judson, Sandy Lake.
Doyle, Joseph A., Greenville.
Elliott, John W., Sharon.
Ferringer, John E., Stoneboro.
Fisher, Philip P., Sharon.
Frye, Benjamin A., Sharpsville.
Hagin, Edward N., Sharon.
Hamborszky, Eugene, Farrell.
Hanna, David B., Stoneboro.
Heilman, Salem, Sharon.
Hoffman, James D., Jackson Center.
Hogue, Thomas F., Fredonia.
Hoon, Anthony I., Mercer.
Hope, Paul T., Mercer.
Hope, Robert M., Mercer.
Hunter, John A., West Middlesex.
Hyde, Allan P., Sharon.
Jones, Orlando A., Sharon.
Kennedy, George W., Sharon.
Knipple, Frederick W., Mercer.
Kusmin, Harry, Farrell.
MacBride, Martha Edith, Grove City.
McConnell, Edwin M., Grove City.
McElhaney, Clarence W., Greenville.
McKinstry, Guy H., Atlasburg (Washington Co.).
Marshall, Clifford, Sharon.
Martin, John H., Greenville.

Martin, John M., Grove City.
Matta, Florence B., Brownsville (Fayette Co.).
Mehler, Carl J., Sharon.
Mitchell, Andrew J., Sharon.
Mitchell, Thomas H., Jamestown.
Mossman, B. Edwin, Jr., Greenville.
Mossman, Beriah E., Greenville.
Nelson, Ernest F., Grove City.
O'Brien, Augustus M., State St., Sharon.
Parks, Arthur A., Fredonia.
Phillips, William H., Greenville.
Reed, Joseph H., Sharon.
Richardson, William W., Mercer.
Rickenbrode, Charles O., Farrell.
Robinson, Charles I., 1407 Middle St., Sharpsburg (Allegheny Co.).
Sprowl, John P., Grove City.
Tidd, Ralph M., Clark.
Tinker, Guert M., Sharon.
Twitmyer, John H., Sharpsville.
Walker, Charles I., Sharon.
Washabaugh, David J., Grove City.
Weidman, J. Clayton, King Apts., Bayard St., Oakland Sta., Pittsburgh (Allegheny Co.).
White, Harry, Sharon.
Williams, Charles B., Sharon.
Wilson, Homer S., Grove City.
Wilson, William L., Grove City.
Woods, Samuel A., Sharon.
Wyant, William W., Farrell.
Yeager, M. George, Mercer.

MIFFLIN COUNTY SOCIETY.

(Organized March 4, 1874.)

President...Charles J. Stambaugh, Reedsville.
V. Pres.....F. A. Rupp, Lewistown.
Benjamin R. Kohler, Reedsville.
Sec. and Librarian...James A. C. Clarkson, Lewistown.
Treasurer...A. S. Harshberger, Lewistown.
Reporter....Robert T. Barnett, Lewistown.
Censors.....Walter S. Wilson, Lewistown.
Walter H. Parcels, Lewistown.
Charles H. Brisbin, Lewistown.
Com. on Pub. Policy and Legislation..A. S. Harshberger, Lewistown.
Hugh S. Alexander, Belleville.
Samuel H. Rothrock, Reedsville.
Frederick A. Rupp, Lewistown.
Samuel J. Boyer, Milroy.

Stated meetings in Lewistown or elsewhere as may be selected, on the first Thursday of each month. Election of officers in December.

MEMBERS (26).

Alexander, Hugh S., Belleville.
Allison, Elizabeth, Madison, Wis.
Barnett, Robert T., Lewistown.
Boyer, Samuel J., Milroy.
Brisbin, Charles H., Lewistown.
Campbell, Marsden D., Belleville.
Carney, John A., Grantsville, Md.
Clarkson, James A. C., Lewistown.
Getter, John P., Belleville.
Harshberger, Alexander S., Lewistown.
Hazlett, Silas M., Allensville.
Hunter, John R. W., Lewistown.
Kohler, Benjamin R., Reedsville.
McKim, Vincent I., Burnham.
Mahr, Irving Oliver, Loganton (Clinton Co.).
Miller, Henry E., McAlevys Fort (Hunt. Co.).
Mitchell, James W., Lewistown.
Parcels, Walter H., Lewistown.
Rothrock, Samuel H., Reedsville.
Rupp, Frederick A., Lewistown.
Smith, Thomas H., Burnham.
Stambaugh, Charles J., Reedsville.
Steele, Bruce P., McVeytown.
Sweigart, Henry W., Lewistown.
Swigart, Samuel W., Lewistown.
Wilson, Walter S., Lewistown.

MONROE COUNTY SOCIETY.

(Organized November 24, 1902.)

President...John H. Stearns, Delaware Water Gap.
V. Pres.....J. F. Miller, Stroudsburg.
Secretary...Esther W. Gulick, Stroudsburg
Treasurer...Charles S. Logan, Stroudsburg.
Reporter....Charles S. Flagler, Stroudsburg.
Censors.....Alvin A. Wertman, Tannersville, 3 yrs.
Harry S. VanEtten, Stroudsburg, 2 yrs.
Eugene H. Levering, Stroudsburg, 1 yr.
Com. on Pub. Policy and Legislation..J. Anson Singer, E. Stroudsburg.

Regular meetings held in Miller Hall, Stroudsburg, the first Wednesday in each month at 3:00 P. M. Annual meeting in January.

MEMBERS (25).

Angle, Walter L., East Stroudsburg.
Brown, Fannie Hurd, North Water Gap.
DeKay, Julius Miner, Mountain Home.
Flagler, Charles S., 624 Main St., Stroudsburg.
Gulick, Esther W., 520 Main St., Stroudsburg.
Hagenbauch, Phoebe H. F., Stroudsburg.
Hagerman, John A., Sciota.
Henry, John C., East Stroudsburg.
Levering, Eugene H., Stroudsburg.
Levering, William R., Stroudsburg.
Logan, Charles Shaw, Stroudsburg.
Longacre, Elsie U. L., Tannersville.
Miller, Joseph F., Stroudsburg.
Miller, Nathaniel C., Stroudsburg.
Ritter, Frederick William, Tannersville.
Rosenkrans, Carl B., East Stroudsburg.
Shupp, Eugene A., Kunkletown.
Singer, J. Anson, East Stroudsburg.
Slee, Richard, Swiftwater.
Smith, Louis B., Bushkill (Pike Co.).
Stearns, John Henry, Delaware Water Gap.
Stotz, Joseph A., Brodheadsville.
Trach, David C., Kresgeville.
VanEtten, Harry S., Stroudsburg.
Wertman, Alvin A., Tannersville.

MONTGOMERY COUNTY SOCIETY.

(Organized January, 1847.)

President...Benjamin F. Hubley, Norristown.
V. Pres.....Joel D. Brown, Royersford, R.D. 3.
A. H. O'Neal, Wayne (Del. Co.).
Secretary...Harry H. Whitcomb, Norristown.
Cor. Sec. and Rept....Edgar S. Buyers, Norristown.
Treasurer...William G. Miller, Norristown.
Censors.....Charles H. Mann, Bridgeport.
C. Zeigler Weber, Norristown.
George F. Hartman, Port Kennedy.
Com. on Pub. Policy and Legislation..Joseph K. Weaver, Norristown.
Oliver C. Heffner, Pottstown.
J. Quincy Thomas, Conshohocken.
Lib. Com...Howard F. Pyfer, Norristown.
Reinoehl Knipe, Norristown.
J. Lawrence D. Eisenberg, Norristown.
Editors of Bulletin....W. Read Roberts, Norristown.
Frank C. Parker, Norristown.
George F. Hartman, Port Kennedy.

Stated meetings in Charity Hospital, Norristown, at 2:30 P.M. on the first and third Wednesdays of every month, excepting July and August. Election of officers in January.

MEMBERS (113).

Allebach, Newton G., Souderton.
Allen, Frederick B., North Wales.
Anders, Warren Z., Trappe.
Arnold, Herbert A., Ardmore.
Ashenfelter, William J., Pottstown.
Baggs, Albert M., Abington.
Basney, Sterling C., Mont Clare.
Bauman, J. Warren, Lansdale.
Benner, Ervin F., Salfordville.
Bigony, Franklin G., Lansdale.
Blanck, Joseph E., Green Lane.
Bostock, Herbert A., Norristown.
Bower, John Oscar, Wyncote.
Branson, Thomas F., Rosemont.
Brown, Joel D., Royersford, R.D. 3.
Bushong, Frederic, Pottstown.
Buyers, Edgar S., Norristown.
Chrystie, Walter, Bryn Mawr.
Cloud, Joseph Howard, Ardmore.
Corson, Edward Foulk, Cynwyd.
Corson, Percy H., Plymouth Meeting.
Dedaker, Frank M., Collegeville.
Donaldson, Albert Barnes, Bala.
Doran, Charles F., Phoenixville (Chester Co.).
Drake, Howard H., Norristown.
Easton, Flora Parker, Norristown.
Eisenberg, J. Lawrence D., Norristown.
Eisenberg, Philip Y., Norristown.
Elmer, Robert P., Wayne (Delaware Co.).
Evans, Alexander Rae, Gladwyne.
Fabbri, Remo, 354 E. Main St., Norristown.
Faries, Clarence T., Narberth.
Galbreath John A., 366 High St., Pottstown.
Godfrey, Andrew, Ambler.
Gotwals, John Elmer, Phoenixville (Chester Co.).
Graber, Henry, Royersford.
Graber, James D., Royersford.
Hanley, Paul D., Pottstown.
Harris, Richard H., Elkins Park.
Hartman, George F., Port Kennedy.
Heffner, Oliver C., Pottstown.
Hersh, John G, East Greenville.
Highley, George N., Conshohocken.
Horning, Samuel B., Collegeville.
Hough, Charles B., Ambler.
Hubley, Benjamin F., Norristown.
Hunsberger, J. Newton, Norristown.
Hunsberger, William H., Pennsburg.
Irwin, George R., Bridgeport.
Jago, Arthur H., Ardmore.
Jameson, William B., Jenkintown.
Keeler, Russell R., Harleysville.
Keeler, Vincent Z., Harleysville.
Kell, Elmer A., 315 King St., Pottstown.
Knipe, Jacob O., Norristown.
Knipe, Reinoehl, Norristown.
Knipe, William H., Limerick.
Krieble, Elmer G., Worcester.
Lakin, H. Pearce, Lansdale.
Luders, Charles Williamson, Cynwyd.
Lukens, George T., Conshohocken.
McKenzie, William, Conshohocken.
Mann, Charles H., Bridgeport.
Marklay, John Morris, Graterford.
Mauger, Lee F., Pottstown.
Miller, George W., Norristown.
Miller, S. Metz, State Hospital, Norristown.
Miller, William G., Norristown.
Nathan, David, Norristown.
Neiffer, Milton K., Wyncote.
Neiman, Howard Y., Pottstown.
Nicholson, Percival, Ardmore.
O'Neal, Alexander H., Wayne (Delaware Co.).
Parker, Frank C., Norristown.
Peterson, Jessie Marie, Norristown.
Podall, Harry C., State Hospital, Norristown.
Porter, J. Elmer, Pottstown.
Pyfer, Howard F., Norristown.
Quinn, Elwood T., Jenkintown.
Rahn, Norman H., Souderton.
Read, Alfred H., Norristown.
Reed, Henry D., Pottstown.
Roberts, Willis Read, Norristown.
Roth, John A., Red Mill.
Rouse, John, Ogontz.
Rule, Amy Jean, Norristown.
Scholl, Harvey F., Green Lane.
Scholl, Henry Nathaniel, Kulpsville.
Seiple, J. Howard, Center Square.
Sener, Walter Jordan, Douglassville (Berks Co).
Sharpe, John S., Haverford.
Sharpless, Frederic C., Rosemont.
Slattery, Katharine T., Norristown.
Slifer, Henry F., North Wales.
Smyth, Henry Field, Wayne (Delaware Co.).
Stein, George W., Norristown.
Stein, Walter Jacob, Ardmore.
Thomas, J. Quincy, Conshohocken.
Toland, William Arthur, 117 High St., Pottstown.
Tunnell, Monroe H., Rosemont.
Tyler, Benjamin A., Royersford.
VanBuskirk, Frederick W., Pottstown.
Weaver, Joseph K., Norristown.
Weber, C. Zeigler, Norristown.
Weber, Mathias Y., Lower Providence.
Welker, Henry C., Norristown.
Whitcomb, Harry H., Norristown.
Wiley, S. Nelson, 6044 Catharine St., Philadelphia (Philadelphia Co.).
Wills, T. Edmund, Pottstown.
Wolfe, R. Vincent, Norristown.
Wright, Winfred J., Skippack.
Wylie, Charles R., 558 High St., Pottstown.
Yeakle, Walter A., Norristown.

MONTOUR COUNTY SOCIETY.

(Organized June 15, 1874.)

President...Raymond J. Hauser, Danville.
V. Pres.....Reid Nebinger, Danville.
Robert Swift Patten, Danville.
Sec. and Reporter....Cameron Shultz, Danville.
Treasurer...James E. Robbins, Danville.
Censors.....Hugh B. Meredith, Danville, 3 yrs.
Edwin A. Curry, Danville, 2 yrs.
William H. Krickbaum, Danville, 1 yr.
Com. on Pub. Policy and Legislation..P. C. Newbaker, Danville.
John H. Sandel, Danville.
G. B. M. Free, Danville.

Stated meetings in Danville the third Friday in January, March, May, June, August, October and November at 8 P.M. Election of officers in January.

MEMBERS (18).

Ashenhurst, Ida M., State Hospital, Danville.
Bitler, Benjamin E., Pottsgrove (Northum. Co.).
Curry, Edwin A., Danville.
Free, George B. M., State Hospital, Danville.
Gibson, Burgers A., Danville.
Hammers, James S., State Hospital, Danville.
Hauser, Raymond J., Danville.
Krickbaum, William H., State Hospital, Danville.
Mayberry, Charles B., Retreat (Luzerne Co.).
Meredith, Hugh B., State Hospital, Danville.
Nebinger, Reid, Danville.

Newbaker, Philip C., Danville.
Patten, Robert Swift, Danville.
Robbins, James E., State Hospital, Danville.
Sandel, John H., Danville.
Shellenberger, Edward B,. State Hosp., Danville.
Shultz, Cameron, Danville.
Snyder, John Howard, Washingtonville.

NORTHAMPTON COUNTY SOCIETY.

(Organized July 10, 1849.)

President...Thomas C. Zulick, Easton.
V. Pres.....Cardinal C. McCormick, Pen Argyl.
C. F. Welden, Bethlehem.
Secretary...W. Gilbert Tillman, Easton.
Cor. Sec....Frederick E. Ward, Easton.
Treasurer...Clinton F. Stofflet, Pen Argyl.
Reporter....Walter D. Chase, Bethlehem.
Censors.....William P. O. Thomason, Easton.
Albert A. Seem, Bangor.
William P. Walker, South Bethlehem.
Com. on Pub. Policy and Legislation..Charles Collmar, Easton.
Henry C. Pohl, Nazareth.
David H. Keller, Bangor.

Meetings shall be held at 11 A.M. on the third Friday of every month except August at such places as the society may determine by vote. Outing meeting in July.

MEMBERS (118).

Anderson, George R., Easton.
Andrew, William Earnest, Pen Argyl.
Babcock, Levis C., Bethlehem.
Baum, Frank L., Nazareth.
Beck, Charles E., Portland.
Beck, Richard H., Hecktown.
Beck, Senn Grim, Hecktown.
Blank, Oscar F., Bethlehem.
Bloss, Raymond H., W. Bethlehem (Lehigh Co.).
Boyle, Patrick F., South Bethlehem.
Burkhart, Herman A., 26 S. Main St., Bethlehem.
Butler, Thomas James, South Bethlehem.
Carroll, Thomas A., Belfast.
Carty, Harry B., Freemansburg.
Chambers, Francis S., 79 N. Fourth St., Easton.
Chase, Walter D., Bethlehem.
Collmar, Charles, Easton.
Condron, James J., 362 Berwick St., Easton.
Cope, Thomas, Nazareth.
Cope, William F., Easton.
Correll, Paul R., Easton.
Dech, Elmer J., 1022 Washington St., Easton.
Dech, Schuyler H., 118 South Third St., Easton.
Deibert, Edward J., Hellertown.
Dilliard, Benjamin F., East Bangor.
Edwards, H. Threlkeld, South Bethlehem.
Erwin, Francis H., Freemansburg.
Estes, William L., 805 Delaware Ave., S. Bethlehem.
Estes, William Lawrence, Jr., South Bethlehem.
Evans, E. William, Easton.
Farber, Wm. Daniel, 16-18 W.21st St., Northampton.
Fetherolf, James Allen, Stockertown.
Field, Benjamin Rush, Easton.
Field, George B. Wood, Easton.
Finady, William Aaron, 29 East Fourth St., South Bethlehem.
Fisler, Harry Cattell, Easton.
Fox, Arthur S., 1418 Washington St., Easton.
Fox, Gustav T., Sun Hotel, Bethlehem.
Fraunfelder Jacob A., Nazareth.
Fretz, John E., Easton.
Glick, William H., 825 E.Third St., South Bethlehem.
Green, Edgar M., Easton.
Hahn, Frank J., Bath.
Heller, Henry D., Hellertown.
Hess, George H., 152 South Fourth St., Easton.
Hoey, Rollo H., Easton.
Hoffman, Edward L., 1148 Northampton St., Easton.
Hunt, Joseph S., Easton.
Keim, Ambrose M., Bethlehem.
Keller, David H., Bangor.
Keller, John C., Wind Gap.
Kessler, Frank J., Easton.
Kleinhans, Paul Howard, Bethlehem.
Klock, Glenn G., Easton.
Kisner, Allen Oscar, Bethlehem.
Koch, John G., Petersville.
Koch, Victor J., Nazareth
Kotz, Adam L., Easton.
Laciar, Henry J., Bethlehem.
Leibert, Harry F., 532 E. Fourth St., S. Bethlehem.
Leigh, Herbert Crozier, 120 N. Third St., Easton.
Longacre, Jacob E., Weaversville.
Love, J. King, Easton.
Ludlow, David Hunt, Easton.
McAvoy, James Bertrand, 727 East Third St., South Bethlehem.
McCormick, Cardinal Claude, Pen Argyl.
McCormick, Henry Edward, 61 N. Third St., Easton.
McIlhaney, William H., South Easton.
McIntire, Charles, Easton.
Mazza, John Josiah Joseph, 9 Broadway, Bangor.
Messinger, Victor S., Easton.
Michler, Henry D., Easton.
Miesse, Kate DeWitt, Easton.
Miller, Elmer C., East Bangor.
Morganstern, James A., 137 S. Third St., Easton.
Oesterreicher, Edward C., Bethlehem.
Ott, Isaac, Easton.
Phillips, Milton W., Chapman Quarries.
Pohl Henry C., Nazareth.
Quiney, James J., 309 Bushkill St., Easton.
Raub, Ruben S., 914 Northampton St., Easton.
Reagan, Arthur D., Easton.
Reaser, Budd Jamison, Martins Creek.
Reichard, Noah W., Bangor.
Rentzheimer, William H., Hellertown.
Richards, Ellerslie Wallace South Easton.
Richards, Oscar M., South Easton.
Roberts, Frederick C., Easton.
Roebuck, John H., Bethlehem.
Rosenberry, Edward S., Stone Church.
Santee, Delbert Kansas, South Bethlehem.
Schnabel, Edwin D., Bethlehem.
Schmoyer, Herbert John, Bethlehem.
Seem, Albert A., Bangor.
Sheridan, Rose B., South Bethlehem.
Sherrer, Frederick A., Easton.
Shimer, Sterling D., Easton.
Stem, Preston E., South Bethlehem.
Stofflet, Clinton F., Pen Argyl.
Stout, Abraham, Bethlehem.
Swan, Tyrus E., Easton.
Thomason, William P. O., Easton.
Tillman, W. Gilbert, 1803 Washington St., Easton.
Uhler, Stewart Mann, Pen Argyl.
Uhler, Sydenham P., Easton.
Uhler, Tobias M., 3120 Montgomery Ave., Philadelphia (Philadelphia Co.).
Updegrove, Harvey C., Easton.
Updegrove, Jacob D., Easton.
Villochi, Louis James 135 Northampton St., Easton.
Walker, William P. South Bethlehem.
Walter, Robley D., 842 Northampton St., Easton.
Ward, Frederick E., 1119 Ferry St., Easton.
Weaver, Henry F., Easton.
Welden, Carl F., Bethlehem.
Wilson, John H., 169 W. Broad St., Bethlehem.
Yost, Robert J., Fourth and Vine Sts., South Bethlehem.
Ziegenfuss, Nathan, South Bethlehem.
Zulick, Thomas C., Easton.

NORTHUMBERLAND COUNTY SOCIETY.

(Reorganized November 27, 1903.)

President...Charles W. Rice, Northumberland.
V. Pres.....Charles M. Thomas, Sunbury.
Joseph E. Ratajski, Mt. Carmel.
Sec. Rept...Horatio W. Gass, Sunbury.
Asst. Sec. and
Treasurer...Robert B. McCay, Sunbury.
Asst. Ed....Henry T. Simmonds, Shamokin.
Robert B. McCay, Sunbury.
Censors.....Charles H. Swenk, Sunbury.
Lester E. Schoch, Shamokin.
Henry T. Simmonds, Shamokin.
Com. on Pub.
Policy and
Legislation..Harvey M. Becker, Sunbury.
Oscar E. Salters, Shamokin.
J.C. Poffenberger, 251 Arch St., Sunbury.

Stated meetings at 2 P.M. in Sunbury, the first Wednesday of January, March, May, September and November, and in Shamokin or such place as the society shall designate, the first Wednesday in February, April, June, October and December. Annual meeting in January.

MEMBERS (56).

Allison, Charles Edward, Elysburg.
Bealor, Benjamin A., Shamokin.
Becker, Harvey M., Sunbury.
Bogar, Joseph D., Millersburg (Dauphin Co.).
Burg, Stoddard Somers, Northumberland.
Clark, Alfred C., Sunbury.
Cooner, Charles C., Kulpmont.
Cooper, Edward B., Sunbury.
Cressinger, John Brice, Sunbury.
Deitrick, George A., Sunbury.
Dietz, Charles K., 400 N. Spruce St., Shamokin.
Drumheller, Francis E., Sunbury.
Eister, W. Howard, Sunbury.
Faughnan, P. Joseph, Locust Gap.
Flanagan, Michael J., Shamokin.
Gass, Horatio W., Sunbury.
Geise, Samuel B., Sunbury.
Gerberich, Enos A., Shamokin.
Gill, George G., Sunbury.
Graham, William T., Sunbury.
Hanlon, William J., Mt. Carmel.
Heilman, D. Franklin, Northumberland.
Hollenback, David S., Shamokin.
Holt, Lloyd Mott, Shamokin.
Jones, Adna S., Shamokin.
Katerman, William D., Hepler (Schuylkill Co.).
Kieffer, James D., Mt. Carmel.
Knights, Agnes Sholly, Shamokin.
Lyons, Fowler, Turbutville.
McCay, Mary A., 79 Queen St., Northumberland.
McCay, Robert B., Sunbury.
McDevitt, Bernard J., Mt. Carmel.
Malick, Clarence Hiram, Herndon.
Markle, Ralph M., State Hospital, Shamokin.
Meek, Frank J., Shamokin.
Maurer, James M., Shamokin.
Poffenberger, Albert T., 251 Arch St., Sunbury.
Poffenberger, Joseph C., 251 Arch St., Sunbury.
Raker, Frederick D., Shamokin.
Ratajski, Joseph E., Mt. Carmel.
Ranck, Lee Russell, Milton.
Reese, George W., Shamokin.
Rice, Charles W., Northumberland.
Salters, Oscar E., Shamokin.
Schnader, Amos B., Mt. Carmel.
Schoch, Lester Edgar, Shamokin.
Schoffstall, Joseph W., Sunbury.
Simmonds, Henry Thomas, Shamokin.
Simmons, Richard H., Shamokin.
Smith, Ellis A., Sunbury.
Steck, Fred P., Shamokin.
Strickland, James G., Shamokin.
Swenk, Charles H., Sunbury.
Thomas, Charles Meade, Sunbury.
Vastine, John H., Shamokin.
Weimer, Clay H., Shamokin.

PERRY COUNTY SOCIETY.

(Organized November 19, 1849.)

President...Benjamin F. Beale, Duncannon.
V. Pres.....Maurice I. Stein, Millerstown.
Harvey W. Woods, Blain.
Sec. and
Reporter....A. R. Johnston, New Bloomfield.
Treasurer...W. Homer Hoopes, Newport.
Censors.....John A. Sheibly, Shermansdale.
Edward E. Moore, New Bloomfield.
Charles E. Delancy, Newport.
Com. on Pub.
Policy and
Legislation..Maurice I. Stein, Millerstown.
E. Kenneth Wolff, Ickesburg.
W. Homer Hoopes, Newport.

Annual meeting at New Bloomfield, second week in January. Monthly meetings at places and times selected.

MEMBERS (20).

Beale, Benjamin F., Duncannon.
Carl, Lenus A., Newport.
Delancy, Charles E., Newport.
Gault, George Washington, Marysville.
Gearhart, Montgomery, Millerstown.
Gutshall, Frank A., Blain.
Hoopes, W. Homer, Newport.
Johnston, A. Russell, New Bloomfield.
Kinzer, George S., Markelsville.
Kistler, Edwin C., Blain.
Moore, Edward E., New Bloomfield.
Morris, William G., Liverpool.
Morrow, William T., Loysville.
Orris, Henry O., Newport.
Patterson, Frank, 2520 Broad Ave., Altoona (Blair Co.).
Sheibly, John A., Shermansdale.
Stein, Maurice Isaac, Millerstown.
VanDyke, Arthur D., Renovo (Clinton Co.).
Wolff, E. Kenneth, Ickesburg.
Woods, Harvey W., Blain.

PHILADELPHIA COUNTY SOCIETY.

(Organized 1849. Incorporated October 2, 1877.)

(Philadelphia is the post office when street address only is given.)

President...Edward E. Montgomery, 1426 Spruce St.
V. Pres.....Seneca Egbert, 4814 Springfield Ave.

Associate Vice Presidents:—
North Branch: Harry Hudson, 1602 Erie Ave.
South Branch: Paul B. Cassidy, 817 S. 21st St.
Kensington Branch: W.T. Dempsey, 2606 N. 5th St.
West Branch: T. J. Ellinger, 737 N. 41st St.
Northeast Branch: G. C. Hanna, 4840 Frankford Ave.
Northwest Branch: H. D. Geisler, 35 High St., Gtn.
Southeast Branch: B. H. Mann, 1603 S. 5th St.

Secretary...William S. Wray, 2007 Chestnut St.
Asst. Sec. and Clerk of the Board of
Directors...Elmer H. Funk, 1318 Spruce St.
Treasurer...E. A. Shumway, 2007 Chestnut St.

Censors:—
Lewis H. Adler, Jr., 1610 Arch St., 1 yr.
William E. Hughes, 3945 Chestnut St., 2 yrs.
William M. Welch, 1411 Jefferson St., 3 yrs.
Jay F. Schamberg, Sec., 1922 Spruce St., 4 yrs.
Judson Daland, 317 S. Eighteenth St., 5 yrs.

Directors:—
J. Torrance Rugh, 1616 Spruce St., 1918.
William S. Newcomet, 3501 Baring St., 1918.
William E. Parke, 1739 N. 17th St., 1918.
Herman B. Allyn, 501 S. 42d St., 1917.
G. Morton Illman, 3235 N. 15th St., 1917.
John D. McLean, 1538 S. Broad St., 1917.
Frank C. Hammond, 1729 Arch St., 1916.
John F. Roderer, 2426 N. Sixth St., 1916.
John J. Robrecht, 3940 Chestnut St., 1916.

Com. on Public Policy and Legislation:—
C. A. E. Codman, Ch., 42d and Spruce Sts.
John B. Carnett, 123 S. 20th St.
William H. Walsh, Children's Hospital.
William Egbert Robertson, 327 S. 17th St.
Frank C. Hammond, 1729 Arch St.

Com. on Library:—
Charles E. deM. Sajous, Ch., 2043 Walnut St.
Charles N. Sturtevant, 4321 Frankford Ave.
J. M. Anders, 1605 Walnut St.
Aaron Brav, 917 Spruce St.
Thomas R. Currie, 512 W. Lehigh Ave.
Elizabeth L. Peck, 4113 Walnut St.
Ella B. Everitt, 1807 Spruce St.

Com. on Increase of Membership:—
Samuel Wolfe, Ch., 1701 Diamond St.
Gordon M. Christine, 2043 N. 12th St.
George C. Yeager, 1419 East Susquehanna Ave.
M. Ginsburg, 1511 S. Ninth St.
John Welsh Croskey, 3325 Powelton Ave.

Com. on Public Health and Preventive Medicine:—
Judson Daland, Ch., 317 S. 18th St.
George W. Norris, 1530 Locust St.
W. M. L. Coplin, 606 S. 48th St.
John A. Kolmer, 927 S. St. Bernard St.
David H. Bergey, 206 S. 53d St.
Samuel G. Dixon, 1900 Race St.
A. A. Cairns, 712 City Hall.

Com. on Archives:—
Albert M. Eaton, Ch., 2017 N. 13th St.
William T. Hamilton, 932 W. Lehigh Ave.
S. P. Gerhard, 639 N. 16th St.
Christian B. Longenecker, 3416 Baring St.
William B. Scull, 3024 Richmond St.
E. J. G. Beardsley, 2030 Chestnut St.
Joseph D. Farrar, 1944 N. Broad St.

Com. on Tuberculosis:—
Thomas McCrae, Ch., 1627 Spruce St.
Charles J. Hatfield, 2008 Walnut St.
Henry R. M. Landis, 11 South 21st St.
T. Mellor Tyson, 1506 Spruce St.
David Riesman, 1715 Spruce St.
Arthur C. Morgan, 3118 Diamond St.
Ward Brinton, 1423 Spruce St.

Com. on Infant Mortality:—
Howard C. Carpenter, Ch., 1805 Spruce St.
Brooke M. Anspach, 119 South 20th St.
William N. Bradley, 1638 S. Broad St.
Charles V. Dorwarth, 1520 Erie Ave.
Julius Blechschmidt, 315 South 18th St.
Alice M. Seabrook, N. College Ave. and 22d St.
Alice W. Tallant, 1807 Spruce St.

Com. on Narcotics:—
Horatio C. Wood, Jr., Ch., 434 S. 44th St.
W. S. Cornell, 729 City Hall.
D. J. McCarthy, 2025 Walnut St.
Clifford B. Farr, 117 S. 22d St.
A. E. Blackburn, 3813 Powelton Ave.
E. Q. Thornton, 1331 Pine St.
A. C. Buckley, Friends' Hospital, Frankford.

Com. on Mental and Nervous Diseases:—
Theodore H. Weisenburg, Ch., 2030 Chestnut St.
F. X. Dercum, 1719 Walnut St.
George E. Price, 1830 S. Rittenhouse Sq.
John H. W. Rhein, 1732 Pine St.
Owen Copp, 4401 Market St.
S. D. W. Ludlum, 216 S. 15th St.
Samuel D. Ingham, 5249 Spruce St.

Com. on Physical Deformity:—
James K. Young, Ch., 222 S. 16th St.
Levi J. Hammond, 1222 Spruce St.
J. Stewart Rodman, 2106 Walnut St.
Arthur J. Davidson, 200 S. 12th St.
Joseph M. Spellissy, 110 S. 18th St.
Walter G. Elmer, 1801 Pine St.
Harry Hudson, 1602 Erie Ave.

Com. on Cancer and Contagious Skin Diseases:—
W. Wayne Babcock, Ch., 2033 Walnut St.
Henry K. Gaskill, 1610 Spruce St.
Christian B. Longenecker, 3416 Baring St.
William S. Newcomet, 3501 Baring St.
William Pepper, 1811 Spruce St.
F. C. Knowles, 2022 Spruce St.
Jay F. Schamberg, 1922 Spruce St.

Com. on Hospital Efficiency Conference:—
Edward Martin, Ch., 1506 Locust St.
Robert G. LeConte, 1530 Locust St.
S. Lewis Ziegler, 1625 Walnut St.
Thomas McCrae, 1627 Spruce St.

Com. on Coöperating Allied Agencies and Institutions:—
Wm. Duffield Robinson, Ch., 2012 Mt. Vernon St.
C. Lincoln Furbush, 1501 Spruce St.
C. B. Longenecker, 3416 Baring St.
P. Brooke Bland, 1621 Spruce St.
Samuel McC. Hamill, 1822 Spruce St.
Damon B. Pfeiffer, 2028 Pine St.
Harry A. Duncan, 2721 W. Lehigh Ave.

Com. on Reception for Prominent Medical Visitors and Medical Societies:—
Henry D. Jump, Ch., 4634 Chester Ave.
John G. Clark, 2017 Walnut St.
Hobart A. Hare, 1801 Spruce St.
P. B. Cassidy, 817 S. 21st St.
George A. Knowles, 4812 Baltimore Ave.
Clarence P. Franklin, 121 S. 16th St.
S. Lewis Ziegler, 1625 Walnut St.

Com. on Alleged Malpractice:—
Samuel M. Wilson, Ch., 1517 Arch St.
B. F. Devitt, 1503 N. 15th St.
J. W. West, 1125 Wallace St.
John Strobel, 948 N. 5th St.
Wilmer Krusen, 127 N. 20th St.
S. Leon Gans, The Brantwood.
Franklin Brady, 1815 Frankford Ave.

Com. on Vision and Hearing:—
William M. Sweet, Ch., 1205 Spruce St.
S. H. Brown, 1901 Mt. Vernon St.
G. Morley Marshall, 1819 Spruce St.
William Zentmayer, 1819 Spruce St.
Nathan P. Stauffer, 4833 Baltimore Ave.
Ralph Butler, 1926 Chestnut St.
Mary Buchanan, 2106 Chestnut St.

Com. on Public Education:—
R. Max Goepp, Ch., 124 S. Eighteenth St.
Wendell Reber, 1212 Spruce St.
S. D. Risley, 2018 Chestnut St.
Morris Booth Miller, 2117 Pine St.
H. R. M. Landis, 11 S. 21st St.
H. C. Carpenter, 1805 Spruce St.
John A. Kolmer, 927 S. St. Bernard St.

Com. on Home for Society:—
J. M. Anders, Ch., 1605 Walnut St.
Levi J. Hammond, 1222 Spruce St.
I. P. Strittmatter, 999 N. 6th St.
William Duffield Robinson, 2012 Mount Vernon St
C. A. E. Codman, Spruce and 42d Sts.
Jay F. Schamberg, 1922 Spruce St.
Joseph Sailer, 1830 Spruce St.

Com. on Foods, Drugs and Beverages:—
E. Quin Thornton, Ch., 1331 Pine St.
A. A. Stevens, 314 S. 16th St.
Martha Tracy, 5138 Wayne Ave.
Charles E. deM. Sajous, 2043 Walnut St.
Martin E. Rehfuss, 1934 Chestnut St.
Ludwig Loeb, 1421 N. 15th St.

Com. on Insect and Animal Transmitters of Dis:—
Randle C. Rosenberger, Ch., 2330 N. 13th St.
Damaso Rivas, Lansdowne.
N. A. Gildersleeve, "Roselawn," Hilldale Road, Lansdowne.
Eugene A. Case, 63 W. LaCrosse Ave., Lansdowne.
F. D. Weidman, 242 N. 61st St.
Robert A. Keilty, Med. Lab., Univ. of Pa.
John A. Roddy, 1604 Pine St.

Com. on Public Utilities:—
John D. McLean, Ch., 1538 S. Broad St.
T. J. Ellinger, 737 N. 41st St.
E. S. Saylor, 2005 Chestnut St.
Morris Booth Miller, 2117 Pine St.
Hubley R. Owen, 2046 Pine St.
Walter S. Cornell, 729 City Hall.
A. A. Cairns, 712 City Hall.

Com. on Ethics and Med. Economics:—
Ross V. Patterson, Ch., 340 S. Sixteenth St.
J. Norman Henry, 1906 Spruce St.
J. M. Fisher, 222 S. Fifteenth St.
George G. Ross, 1721 Spruce St.
Edward B. Hodge, Jr., 346 S. Sixteenth St.
J. Leslie Davis, 135 S. Eighteenth St.

Stated meetings for business the third Wednesday of January, April, June and October, at 8:15 p.m. Election of officers in January. Scientific meetings the second and fourth Wednesdays of each month, except July and August, and the fourth Wednesday of June and the second Wednesday of September, at 8:30 p.m., all at the College of Physicians, Twenty-second and Ludlow Sts.

NORTH BRANCH.

Chairman.Daniel Longaker, 1402 N. 16th St.
Clerk.....Granville A. Lawrence, 1412 W. Erie Ave.

Meets the fourth Monday night, at the Auditorium of the Philadelphia Clinical Association, 1520 N. Fifteenth St.

SOUTH BRANCH.

Chairman.J. Evans Scheehle, 1504 Christian St.
Clerk.....Joseph M. Endres, 1416 S. 15th St.

Meets the fourth Friday night, at St. Rita's Club Rooms, S. E. Cor. Broad and Wharton Sts.

KENSINGTON BRANCH.

Chairman.Thos. I. O'Drain, 2546 E. Allegheny Ave.
Clerk.....Harry W. Goos, N. E. Cor. Amber and Dauphin Sts.

Meets the first Friday night, at the Kensington Building of the Free Library of Philadelphia, Lehigh Avenue and Sixth Street.

WEST BRANCH.

Chairman.A. Weise Hammer, 902 N. 41st St.
Clark.....Hiram L. Lutz, 5525 Woodland Ave.

Meets the third Tuesday night, at the Presbyterian Hospital, Filbert and Thirty-ninth Streets.

NORTHEAST BRANCH.

Chairman.Chas. N. Sturtevant, 4321 Frankford Ave.
Clerk.....F. F. Borzell, 900 E. Westmoreland St.

Meets the third Thursday night, at the Frankford Building of the Free Library of Philadelphia, Frankford Avenue and Overington Street.

NORTHWEST BRANCH.

Chairman.Harry Wilmer, 6019 Germantown Ave.
Clerk.....Charles C. Watt, Jr., Wayne Ave. and West Hortter St.

Meets the fourth Thursday night, at the Vernon Park Building of the Free Library of Philadelphia, Germantown Avenue above Chelten Avenue.

SOUTHEAST BRANCH.

Chairman.Aaron Brav, 917 Spruce St.
Clerk.....Morris Ginsburg, 1511 S. Ninth St.

Meets the first and third Friday nights, at the Southwark Building of the Free Library of Philadelphia, Fifth Street below Washington Avenue.

All Branches meet at 9 p.m. monthly except July and August.

This society publishes a program of the medical meetings of the various societies for the week, from September to July, inclusive, the editor of which is Dr. A. B. Hirsh, 22 S. 21st Street.

The society also has a Medical Defense Fund of its own for which purpose twenty-five cents is laid aside for each member, the membership being based on the number of members in good standing on August 31 of each year. The Honorable Hampton L. Carson and Samuel M. Clement, Jr., Esq., are attorneys for this medical defense feature.

MEMBERS (1606).

Aarons, Bernard B. H., 1909 North Park Ave.
Abbott, Alexander C., 4229 Baltimore Ave.
Abbott, Frank Cook, 406 S. Broad St.
Adams, Charles T., 5701 Girard Ave.
Adams, J. Howe, Paoli (Chester Co.).
Adler, Lewis H., Jr., 1610 Arch St.
Albrecht, Herman E., 217 S. Forty-sixth St.
Alexander, Emory Graham, 1627 Oxford St.
Allen, Alfred Reginald, 2013 Spruce St.
Allen, Francis Olcott, Jr., 2216 Walnut St.
Allen, Jesse Hall, 1327 Spruce St.
Allen, Luther M., 3100 Wharton St.
Allen, Mary E., 137 North Twenty-first St.
Aller, Thomas G., 1126 Spruce St.
Allis, Oscar H., 1604 Spruce St.
Allyn, Herman B., 501 South Forty-second St.
Alrich, William M., Carpenter and Main Sts., Gtn.
Anders, Andrew, 2200 North Twentieth St.
Anders, Howard S., 1700 Walnut St.
Anders, James M., 1605 Walnut St.
Anders, J. Wesley, 1329 West Somerset St.
Anderson, Joseph W., 1831 Chestnut St.
Andrus, Walter Haskell, 5913 Greene St., Gtn.
Ankeney, Clinton R., 803 N. Twenty-fourth St.
Annesley, William H., 3445 Frankford Ave.
Anspach, Brooke M., 119 South Twentieth St.
Antoine, Felix C., 4517 Fairmount Ave.
Apeldorn, Ernest F., 2113 North Howard St
Applegate, John C., 3540 North Broad St.
Appleman, Leighton F., 308 S. Sixteenth St.
Armstrong, Thomas M., 1429 Christian St.
Arnett, James H., 2540 North Eleventh St.
Arnold, Jesse O., 2503 North Eighteenth St.
Arnold, Minnie Uhler, 109 S. Twenty-second St.
Artelt, Henry, 1521 North Eighth St.
Asher, Joseph M., 1335 North Broad St.
Ashton, W. Easterly, 2011 Walnut St.
Astley, G. Mason, 5211 Girard Ave.
Atkins, George Hulings, 1727 South Broad St.
Atlee, Louis William, 2039 Pine St.
Attix, James C., 2355 N. Thirteenth St.
Auge, Emily G. Whitten, 2734 Wharton St.
Austin, J. Harold, 1815 Spruce St.
Austin, J. Paul, 5915 Greene St., Germantown.
Babbitt, James A., 1901 Chestnut St.
Babcock, W. Wayne, 2033 Walnut St.
Bachman, Henry S., 2016 North Second St.
Bacon, H. Augustus, 1527 Girard Ave.
Bacon, John, Torresdale, Philadelphia.
Baer, Benjamin F., 2115 Chestnut St.
Baer, Benjamin F., Jr., 2040 Chestnut St.
Bailey, Robert Wellesly, 102 East Price St., Gtn.
Bainbridge, Empson H., 1425 Poplar St.

Baker, A. George, 404 Susquehanna Ave.
Baker, Frank K., 3019 Diamond St.
Baker, George F., 421 Walnut St.
Baldwin, James H., 1426 Pine St.
Baldwin, Kate W., 1117 Spruce St.
Baldy, J. Montgomery, 2219 DeLancey St.
Balentine, Percy L., 2117 Chestnut St.
Ball, Joseph P., 5001 Frankford Ave.
Balliet, Tilgham M., 3709 Powelton Ave.
Banes, S. Thompson, 845 North Broad St.
Banks, William B., 736 North Nineteenth St.
Barcus, Adolph L., 923 North Eighth St.
Bardsley, G. Ashton, 129 W. Susquehanna Ave.
Bare, Horace C., 2104 Green St.
Barenbaum, Louis, 519 North Fourth St.
Barlow, Aaron, 1431 North Franklin St.
Barlow, Louis E., 3113 Richmond St.
Barnard, Everett P., 119 South Nineteenth St.
Barnes, Charles S., 35 South Nineteenth St.
Barr, Agnes, 2009 Chestnut St.
Barrett, Martin C., St. Agnes Hospital.
Barry, William David, 2501 N. Thirty-second St.
Bartle, Henry J., 1727 North Seventeenth St.
Barton, Isaac, 27 South Nineteenth St.
Bateman, Sydney E., 42 South Fifty-first St.
Bates, Hervey L., S. W. Cor. Wayne Ave. and Hansberry St., Germantown.
Batroff, Warren C., 2456 N. Seventeenth St.
Bauer, Charles, 1335 North Thirteenth St.
Bauer, L. Demme, 1713 West Girard Ave.
Bauer, Marie L., 1633 Fairmount Ave.
Baum, Charles, 1828 Wallace St.
Baxter, Hart B., 1422 Christian St.
Bayley, Weston D., 424 Weightman Bldg., 1524 Chestnut St.
Beach, Edward W., 5401 Spruce St.
Bean, J. Robbins, Ashbourne (Montg. Co.).
Beardsley, Edward J. G., 2030 Chestnut St.
Beardwood, Matthew, Jr., 569 Jamestown Ave., Roxborough, Philadelphia.
Beates, Henry, Jr., 260 S. Sixteenth St.
Becker, Carl Emil, 954 North Tenth St.
Beckley, Aller G,, 2836 Columbia Ave.
Bedrossian, Edward H., 5231 Chestnut St.
Beebe, Richard C., Lewes, Del.
Beecroft, Elizabeth McKinley, 309 W. Susquehanna Ave.
Behrend, Moses, 1427 North Broad St.
Bell, Edward H., 739 Spruce St.
Beltran, Basil R., 1828 S. Rittenhouse Sq.
Bemis, Royal W., 2512 North Fifth St.
Bender, Engelbert C., 330 S. Fifty-second St.
Bennett, William H., Children's Sea-Shore House, Atlantic City, N. J.
Berens, Bernard, 2041 Chestnut St.
Berens, Conrad, 2004 Chestnut St.
Bergeron, P. Narbert, 1908 Girard Ave.
Bergey, David H., 206 South Fifty-third St.
Bernardy, Henry L., 321 South Eleventh St.
Bernd, Leo H., 2106 Chestnut St.
Bernheim, Albert, 1225 Spruce St.
Beyea, Henry D., 1734 Spruce St.
Biedert, Charles C., 116 S. Eighteenth St.
Bird, Gustavus C., 1415 Erie Ave.
Birdsall, Joseph C., 123 S. Thirty-sixth St.
Birney, Herman H., 4016 Chestnut St.
Bishop, Aaron Lafayette, 5324 Vine St.
Bishop, Frank G., 1502 Montgomery Ave.
Blackburn, Albert E., 3813 Powelton Ave.
Blackwood, James Douglas, Jr., 5346 Wayne Ave.
Blakeslee, Walter H., 3328 N. Seventeenth St.
Bland, Pascal Brooke, 1621 Spruce St.
Blayney, Charles Alva, 5045 Market St.
Blechschmidt, Dott Case, 315 S. Eighteenth St.
Blechschmidt, Julius, 315 S. Eighteenth St.
Block, Frank Benton, 1503 Girard Ave.
Bloom, Homer C., 1433 Walnut St.
Bloomfield, Maximillian D., 2008 N. Park Ave.
Blumberg, Nathan, 708 Pine St.
Bobb, Wallace G., 15th St. and Allegheny Ave.
Bochroch, Max H., 1539 Pine St.
Bogart, Arthur E., 5046 Market St.
Boger, John A., 2213 North Broad St.
Bogia, Reuben A., 760 North Preston St.
Boice, J. Morton, 4020 Spruce St.
Boles, Russell S., Wynnewood (Montg. Co.).
Bolin, Jesse Albert, 3517 Longshore St.
Bolling, Robert H., Chestnut Hill, Philadelphia.
Bolton, Samuel, 4701 Leiper St.
Bond, Earl Danford, 4401 Market St.
Bonnaffon, Samuel A., 3439 Walnut St.
Bonney, Charles W., 1117 Spruce St.
Boon, W. Thomas, 215 Green Lane, Manayunk.
Booye, Mark T., 1818 North Twelfth St.
Borrowes, George H., Laurel Springs, N. J.
Borzell, Francis F., 900 E. Westmoreland St.
Boston, Samuel Clifford, 2249 Catharine St.
Boulton, Eleanore F., P.O. Box 638.
Bowen, Clement Remington, 752 S. Sixtieth St.
Bowen, David R., 922 S. St. Bernard St.
Bower, Franklin S., 3318 Germantown Ave.
Bowers, Wilson, 1803 S. Sixteenth St.
Bowman, Frank S., 1711 South Thirteenth St.
Bowne, Charles J., 446 Queen Lane, Germantown.
Bowyer, Maude A., 1831 Chestnut St.
Boyd, George M., 1909 Spruce St.
Boyd, S. Harold, 5927 Ridge Ave.
Boyer, D. Pellman, 4747 Richmond St.
Boyer, Henry Percival, 4602 Baltimore Ave.
Boyer, J. Clinton, 745 South Third St.
Boyer, Merle S., 2827 Girard Ave.
Bradford, T. Hewson, 1802 DeLancey St.
Bradley, Clarence Davis, 4905 N. Twelfth St.
Bradley, Thomas B., 2009 Chestnut St.
Bradley, William N., 1638 South Broad St.
Brady, Charles P., 7130 Rising Sun Ave.
Brady, Franklin, 1815 Frankford Ave.
Bram, Israel, 1714 North Seventh St.
Brav, Aaron, 917 Spruce St.
Brav, Herman A., 1933 North Broad St.
Bready, William R., Jr., 1857 N. Eleventh St.
Brecker, N. Francis, 2347 St. Albans St.
Bremer, Paul F., 839 North Broad St.
Brick, J. Coles, 1210 Spruce St.
Bricker, Charles E., 2739 Girard Ave.
Bridgett, Charles R., 3332 Chestnut St.
Brinton, Ward, 1423 Spruce St.
Brister, Samuel, 1946 N. Thirty-second St.
Brittingham, James D., 4002 Chestnut St.
Britton, Harry A., Phil. Gen. Hosp., Thirty-fourth and Pine Sts.
Broadfield, John Augustus, 3131 Frankfort Ave.
Brophy, John A., 1819 Chestnut St.
Brown, Claude P., 38 East Logan Ave., Glenolden (Delaware Co.).
Brown, H. MacVeagh, 4608 Baltimore Ave.
Brown, Henry P., Jr., 1523 Locust St.
Brown, Samuel H., Jr., 1901 Mt. Vernon St.
Brown, Walter F., Walters Park.
Brown, Wm. Richard, Jr., 2345 E. Cumberland St.
Brubaker, Albert P., 105 N. Thirty-fourth St.
Brumbaugh, Simon S., 2923 N. Twelfth St.
Brumm, Seth Arthur, 4813 Baltimore Ave.
Bruner, Henry G., 542 North Eleventh St.
Brunet, John E., 2038 North Broad St.
Bryan, J. Roberts, 4200 Chestnut St.
Buchanan, Mary, 2106 Chestnut St.
Buckby, Wilson, 1744 Diamond St.
Buckenham, John Edgar Burnett, Municipal Hosp., Luzerne and Second Sts.
Buckingham, Harry Sheldon, 5615 Washington Ave.
Buckley, Albert C., Friends Hosp., Frankford, Phila.
Buckner, Hubbard Thomas, Jefferson Hosp., Tenth and Sansom Sts.

Bundy, Elizabeth R., 1930 Chestnut St.
Bunting, Josiah T., 6410 Germantown Ave.
Burke, Joseph J., 5117 Baltimore Ave.
Burns, Joseph P., 5231 Chester Ave.
Burns, Louis J. I., 1906 Chestnut St.
Burns, Stillwell C., 1326 Spring Garden St.
Burr, Charles W., 1918 Spruce St.
Burwell, T. Spotuas, 724 S. Seventeenth St.
Busch, John W., 2500 S. Eighteenth St.
Butler, Margaret F., 2127 Green St.
Butler, Ralph, 1926 Chestnut St.
Butt, Miriam M., 1701 Chestnut St.
Butt, William R., 1701 Chestnut St.
Butte, Harley J., 2047 Christian St.
Cadwallader, Williams B., 1710 Locust St.
Cahall, William C., 154 W. Chelten Ave., Gtn.
Cairns, Andrew A., Room 712, City Hall.
Callahan, Andrew, 1829 South Broad St.
Cameron, Geo. A., Greene St. and School Lane, Gtn.
Cameron, John L., 1500 Girard Ave.
Campbell, J. Moore, State Dept. of Health, Harrisburg (Dauphin Co.).
Cariss, Walter L., 801 N. Forty-first St.
Carmany, Harry S., 366 Greene Lane, Roxborough.
Carnett, John Berton, 123 South Twentieth St.
Carpenter, Herbert B., 1805 Spruce St.
Carpenter, Howard C., 1805 Spruce St.
Carpenter, John T., Jr., 2040 Chestnut St.
Carr, Charles D., 350 S. Sixteenth St.
Carrier, Frederic, 406 South Sixteenth St.
Carroll, William, 617 South Sixteenth St.
Carruthers, Georgiana H., 3064 Frankford Ave.
Carson, John Baker, 348 South Sixteenth St.
Carter, Andrew D., 753 North Fortieth St.
Case, Eugene Allen, 63 West LaCrosse Ave., Lansdowne (Delaware Co.).
Cassidy, Paul B., 817 South Twenty-first St.
Cattell, Henry W., 3709 Spruce St.
Chaiken, Jacob B., 924 North Eleventh St.
Chance, Burton, 235 South Thirteenth St.
Chandlee, Wm. Herbert, 4930 Frankford Ave.
Chandler, Swithin, 225 South Twentieth St.
Chapin, Laura Stitzer, 1724 Diamond St.
Chapman, John P., 1700 Pine St.
Chase, Theodore L., 2009 Chestnut St.
Chestnut, James C., 1817 Frankford Ave.
Child, Florence C., McKean Ave., Germantown.
Chirinos, Frederick C., 2656 E. Allegheny Ave.
Chodoff, Louis, 705 Pine St.
Christian, Hilary M., 1321 Spruce St.
Christine, Gordon M., 2043 North Twelfth St.
Ciavarelli, Constantino N., 800 South Tenth St.
Clagett, Augustus H., 2615 North Twenty-ninth St.
Clapp, George H., 5129 Baltimore Ave.
Ciccone, G. Vico, 1409 South Broad St.
Clark, Benjamin F. R., Palmerton (Carbon Co.).
Clark, Elizabeth E., 252 High St., Germantown.
Clark, Elizabeth F. C., 1769 Pine St.
Clark, George G., 2221 North Sixteenth St.
Clark, John G., 2017 Walnut St.
Clark, William L., 1809 Chestnut St.
Clawson, James E., 1707 West Norris St.
Cleveland, F. Mortimer, 5211 Walnut St.
Cloud, Charles H., 14 North Sixtieth St.
Clouting, E. Sherman, 2035 Chestnut St.
Coates, George M., 1736 Pine St.
Coates, Thomas Gordon, 1413 Lombard St.
Codman, Charles A. E., 4116 Spruce St.
Cogill, Lida Stewart, 1831 Chestnut St.
Cohen, Abraham J., 723 Pine St.
Cohen, Herman Bernard, 933 Lindley Ave.
Cohen, J. Solis, 2113 Chestnut St.
Cohen, Leon Solis, 1525 Walnut St.
Cohen, Myer Solis, 4102 Girard Ave.
Cohen, S. Solis, 1525 Walnut St.
Cohn, Adolph, 937 North Eighth St.
Coles, Stricker, 2103 Walnut St.
Coley, Thomas Luther, 256 S. Fifteenth St.
Colgan, James F. E., 1022 North Fifth St.
Colgan, John A., 1809 Chestnut St.
Collins, Arthur A., Oxford (Chester Co.).
Collins, Edward W., Home for Consumptives, Chestnut Hill.
Collins, Foster K., 813 North American Bldg., Broad and Sansom Sts.
Conard, Thomas E., 1855 N. Seventeenth St.
Conner, Annie L., 7065 Germantown Ave.
Cooke, Dudley T., 1536 South Broad St.
Cooke, Edwin S., 1633 Christian St.
Cooper, J. Cardeen, Burwood Farm, Wyoming, Del.
Cooper, Linfred L., P.R.R., Tyrone (Blair Co.).
Cooperman, Morris B., 833 South Third St.
Coplin, William M. L., 606 S. Forty-eighth St.
Copp, Owen, 4401 Market St.
Cornell, Walter S., 729 City Hall.
Corson, Charles C., 6374 Germantown Ave.
Corson-White, Ellen P., 216 South Fifteenth St.
Cortesse, Ignazio, 1025 Christian St.
Craig, Alexander R., 535 N.Dearborn St.,Chicago, Ill.
Craig, Clark R., 331 South Twelfth St.
Craig, Frank A., 2030 Chestnut St.
Craig, John Martin, 308 School Lane, Germantown.
Craig, Nellie Cameron, 215 N. Fifty-second St.
Craig, William F., 1603 West Lehigh Ave.
Cramp, Joseph A., 1902 Chestnut St.
Crandall, Thomas V., 1801 Chestnut St.
Creighton, William J., 1905 Chestnut St.
Croskey, John W., 3325 Powelton Ave.
Crowe, F. Beresford, 728 South Sixtieth St.
Crueger, Edward A., 1123 N. Forty-first St.
Cryer, Matthew H., 1623 Walnut St.
Culbertson, Walter L., 2502 N. Twenty-ninth St.
Curran, John D., 1418 South Broad St.
Currie, Charles A., West Walnut Lane, Gtn.
Currie, Thomas R., 512 West Lehigh Ave.
Custer, David D., 137 Green Lane, Manayunk.
Custer, Ella B., 137 Green Lane, Manayunk.
DaCosta, J. Chalmers, 2045 Walnut St.
DaCosta, John C., Jr., N.W.Cor.Spruce and 15th Sts.
Daland, Judson, 317 South Eighteenth St.
Daniels, Clarence D., 2267 N. Eighteenth St.
d'Apery, Tello J., 767 North Fortieth St.
Davidson, Arthur J., 200 South Twelfth St.
Davies, John R., Jr., Penna. Hosp., Spruce and Eighth Sts.
Davis, Alvah M., 25 High St., Germantown.
Davis, Edward P., 250 South Twenty-first St.
Davis, Gwilym G., 1814 Spruce St.
Davis, J. Leslie, 135 South Eighteenth St.
Davis, Richard S., 302 School Lane, Germantown.
Davis, T. Carroll, 2408 W. Allegheny Ave.
Davis, Warren B., 135 South Eighteenth St.
Davisson, Alexander H., Ardmore (Montg. Co.).
Deal, John Colton, 5325 Haverford Ave.
Deardorff, William H., 5049 Hazel Ave.
Deaver, Henry C., 1415 North Broad St.
Deaver, John B., 1634 Walnut St.
Deaver, Richard W., 6105 Germantown Ave.
DeCarlo, John, 802 South Tenth St.
Deehan, Sylvester J., 843 N. Twenty-fourth St.
DeFord, Moses, 1825 Diamond St.
Deichler, L. Waller, 750 North Forty-first St.
Deitz, George W., 1744 Orthodox St.
Dempsey, William Thomas, 2606 N. Fifth St.
Dengler, Robert H., 2324 North Broad St.
Denny, George H., S. E. Cor. Thirty-ninth and Spring Garden Sts.
Dercum, Clara T., 810 North Broad St.
Dercum, Francis X., 1719 Walnut St.
Despard, Duncan L., 1806 Pine St.
Dever, Francis J., 319 South Eighteenth St.
Devereux, Robert T., 1856 Hunting Park Ave.

Devitt, Benjamin F., 1503 North Fifteenth St.
Devitt, William, 130 Green Lane, Manayunk.
Devlin, Albert J., 1615 North Tenth St.
Dewey, J. Hiland, 1436 Diamond St.
Dick, John W., 1945 Christian St.
Dick, Walter, Dagus Mines (Elk Co.).
Dickson, Frank D., 1814 Spruce St.
Diez, M. Louise, 5733 Spruce St.
Dillard, Henry K., Jr., 234 S. Twentieth St.
Dintenfass, Henry, 415 Pine St.
Diseroad, Benjamin F., 901 West Lehigh Ave.
Dixon, Samuel G., Ardmore (Montgomery Co.).
Doane, Joseph C., Phila.Gen.Hosp.,Pine and 34th Sts.
Doe, Charles Herbert, Episcopal Hosp., Lehigh Ave
Dolson, Frank E., 413-414 Weightman Bldg., 1524 Chestnut St.
Donnelly, Daniel J., 3727 North Fifteenth St.
Donnelly, Dorothy, 213 Green Lane, Roxborough.
Donnelly, Edward J., 3000 West Lehigh Ave.
Dorr, Henry I., 158 Summer St., Somerville, Mass.
Dorrance, George M., 2025 Walnut St.
Dorsett, Rae S., 1729 Arch St.
Dorwarth, Charles Votteler, 1520 Erie Ave.
Dougherty-Trexler, Henrietta M., 923 West Susquehanna Ave.
Douglas, Malcolm, 1814 Tioga St.
Douredoure, Eveleen A., 4107 Baltimore Ave.
Downs, Ardrey W., Med.-Chi. Coll., Cherry and Seventeenth Sts.
Downs, Norton, Fordhooke Farm, Three Tuns (Montgomery Co.).
Downs, Robert N., Jr., 6008 Greene St., Gtn.
Downs, Thomas A., 409 North Forty-first St.
Drake, Elwood L., 2762 Pratt St.
Drayton, William, Jr., 1316 Locust St.
Dripps, John H., 1812 North Eleventh St.
Druce, Thomas W., 1316 South Thirty-fifth St.
Dry, David Miller, Jefferson Hosp., Sansom and Tenth Sts.
Dubbs, John H., 2722 North Twelfth St.
Dubbs, Robert L., 1622 South Eighteenth St.
Duer, Edward L., Odessa, Delaware.
Dukes, John L., 344 N. Fifty-second St.
Dulles, Charles W., 4101 Walnut St.
Duncan, Harry A., 2721 West Lehigh Ave.
Dundore, Claude A., Argonant Hotel, Denver, Colo.
Dunn, Archibald W., Willow Grove (Montg. Co.).
Dunn, John T., 2500 South Seventeenth St.
Dwight, Marcus B., 4025 Walnut St.
Ealer, Percy H., 2027 Spring Garden St.
Earley, Thomas B., 2230 Tioga St.
Earnshaw, Henry C., Bryn Mawr (Montg. Co.).
Eaton, Albert M., 2017 North Thirteenth St.
Eckfeldt, John W., 6312 Vine St.
Eckman, Philip N., 624 N. Twenty-second St.
Edwards, Preston M., 3957 Warren St.
Edwards, Thomson, 906 South Forty-seventh St.
Eft, Frederick, 1340 North Thirteenth St.
Egbert, Joseph C., Wayne (Delaware Co.).
Egbert, Seneca, 4814 Springfield Ave.
Egly, H. Conrad, Kirkwood (Lancaster Co.).
Eichman, Edward A., 440 Lyceum Ave.
Elder, Frank H., 6038 Overbrook Ave.
Eldredge, Clarence S., 2330 N. Seventeenth St
Eliason, Eldredge L., 320 South Sixteenth St.
Ellinger, Theophilus J., 737 N. Forty-first St.
Ellis, Aller G., N.W. Cor. Tenth and Walnut Sts.
Ellis, Samuel, 6203 Elmwood Ave.
Ellis, William T., 1926 North Nineteenth St.
Elmer, Malcomb K., The Normandie, Chestnut and Thirty-sixth Sts.
Elmer, Walter G., 1801 Pine St.
Ely, Thomas Cox, 2041 Green St.
Embery, Frank, 4662 Frankford Ave.
Emich, John P., 3245 North Front St.
Endres, Joseph M., 1416 South Fifteenth St.
Engelhardt, Caroline S. R., Lansdale Hosp., Lansdale (Montgomery Co.).
Enoch, George F., 7926 Frankford Ave.
Erck, Theo. A., 251 South Thirteenth St.
Eshner, Augustus A., 1019 Spruce St.
Evans, William, 4007 Chestnut St.
Everitt, Ella B., 1807 Spruce St.
Eves, Curtis Clyde, 1700 Walnut St.
Ewing, Charles H., 1330 South Seventeenth St.
Falls, Samuel C., 6139 Haverford Ave.
Faries, Randolph, 2007 Walnut St.
Faris, George T., Pennsylvania Hospital for Insane, Market and Forty-ninth Sts.
Farley, Joseph, 1919 South Broad St.
Farr, Clifford B., 117 South Twenty-second St.
Farr, William W., Springfield Ave. and Lincoln Drive, Chestnut Hill.
Farrar, Joseph D., 1944 North Broad St.
Farrington, Charlotte S., 2130 West Passyunk Ave.
Faught, Francis Ashley, 5016 Spruce St.
Feldstein, Sidney L., 2145 N. Fifteenth St.
Felt, Carle L., 2007 Chestnut St.
Fenerty, Vincent J., 2217 East Cumberland St.
Fenton, Thomas H., 1319 Spruce St.
Ferguson, Albert D., 50 East Johnson St., Gtn.
Ferguson, George M., 706 S. Forty-ninth St.
Ferguson, Wm. N., 125 W. Susquehanna Ave.
Ferguson, William Norman, Jr., 2725 N. Fifth St.
Ferris, Francis S., 501 South Forty-fifth St.
Fetterman, Wilfred B., 7047 Germantown Ave.
Fetterolf, George, 134 South Twentieth St.
Fiet, Harvey J., 2152 North Fourth St.
Fife, Charles A., 2033 Locust St.
Finck, Edward B., 1120 Girard St.
Fineman, Harry E., 1338 North Franklin St.
Fischelis, Philip, 828 North Fifth St.
Fish, Harry C., 236 North Fiftieth St.
Fisher, Frank, 1911 Arch St.
Fisher, Henry, 2345 East Dauphin St.
Fisher, Henry M., 1027 Pine St.
Fisher, Herbert P., 5324 Wayne Ave., Gtn.
Fisher, John M., 222 South Fifteenth St.
Fisher, John V., 6027 Larchwood Ave.
Fisher, Lewis, 1322 South Fifth St.
Fisher, Mary, 1911 Arch St.
Fisher, Mulford K., 3128 Diamond St.
Fitzpatrick, Ignatius L. J., 1807 S. Eighteenth St.
Flannery, Leo G., S. W. Cor. Broad and York Sts.
Fleming, Thomas J., 2225 Green St.
Flynn, J. Cajetan, 1225 North Sixth St.
Foehrenbach, Julius E., 3228 North Fifteenth St.
Foltz, J. Clinton, Summit St., Chestnut Hill.
Ford, Walter A., N.E. Cor. 15th and Locust Sts.
Formad, Marie K., 927 North Broad St.
Forman, Horace J., Jr., 3350 North Fifteenth St.
Forst, John R., 166 West Coulter St., Germantown.
Foss, Harold L., 123 S. Main St., Rochester, Minn.
Fox, Herbert, 3902 Locust St.
Fox, L. Webster, 303 South Seventeenth St.
Fraley, Frederick, 314 South Seventeenth St.
Francine, Albert P., 264 South Twenty-first St.
Frankel, Jacob J., 1314 South Fifth St.
Franklin, Clarence P., 121 South Sixteenth St.
Franklin, Marcus, 1518 North Broad St.
Franklin, M. Burnett, 1512 Diamond St.
Frantz, J. Paul, 2541 Columbia Ave.
Fraser, Hugh D., 6618 Woodland Ave.
Frazier, Charles H., 1724 Spruce St.
Freas, Henry M., 418 West Huntingdon St.
Freeman, Frank Ernest, 1231 North Sixtieth St.
Freeman, Walter J., 1832 Spruce St.
Freeman, Walter S., 909 W. Susquehanna Ave.
Frescoln, Leonard D., 3944 Aspen St.
Fretz, Howard G., 1207 Erie Ave.
Freund, Henry H., 1509 South Broad St.
Frick, J. Howard, 402 High St., Germantown.
Fridy, Cyrus W., 58th St. and Thomas Ave.
Friedmann, O. Fleisher, 2107 N. Mervine St.
Fritch, James Scott, 1318 Spruce St.

Fritts, William H., 535 North Eleventh St.
Fritz, W. Wallace, 1600 Summer St.
Fuller, Daniel H., Penn. Hosp. for Insane, Market and Forty-ninth Sts.
Fulton, Z. M. Kempton, 1111 W. Lehigh Ave.
Funk, Elmer H., 1318 Spruce St.
Furbush, Charles Lincoln, 1501 Spruce St.
Fusco, Pasquale, 1230 Reed St.
Fussell, M. Howard, 421 Lyceum Ave., Roxborough.
Galbraith, James L., 2239 North Nineteenth St.
Gallagher, James S., 455 E. Walnut Lane, Gtn.
Gans, Emanuel S., 711 North Franklin St.
Gans, S. Leon, The Brantwood, Parkside and Marlton Aves.
Gartman, Leo N., 523 Pine St.
Gardner, Anna J., 417 East Somerset St.
Gaskill, Henry K., 1610 Spruce St.
Gaston, Ida E., 2833 Diamond St.
Geisler, Howard D., 35 High St., Germantown.
Gerhard, Arthur H., 2110 Pine St.
Gerhard, Samuel P., 639 North Sixteenth St.
Gerlach, Ella M., 3706 Brown St.
Gerlach, Richard F., 1416 N. Seventeenth St.
Gessler, Charles W., 1311 South Broad St.
Getelman, Ralph E., 117 South Forty-fourth St.
Gibbon, John H., 1608 Spruce St.
Gilbride, John J., 1934 Chestnut St.
Gildersleeve, Nathaniel, Roselawn, Hilldale Road, Lansdowne (Dela. Co.).
Gildersleve, George Henry, 525 N. Sixth St.
Gile, Ben Clark, 2018 Chestnut St.
Gill, A. Bruce, 318 South Fifteenth St.
Gilliland, Samuel H., Marietta (Lancaster Co.).
Gilpin, Sherman F., 432 N. Forty-second St.
Ginsburg, Morris, 1511 South Ninth St.
Ginsburg, Nathaniel, 1704 Pine St.
Girvin, John H., 2120 Walnut St.
Gittelson, Samuel J., 1017 Spruce St.
Gittings, J. Claxton, 3942 Chestnut St.
Gleason, E. Baldwin, 2033 Chestnut St.
Goddard, Herbert M., 1338 Spruce St.
Godfrey, Henry G., 2054 East Cumberland St.
Goepp, R. Max, 124 South Eighteenth St.
Goldberg, Harold G., 1925 Chestnut St.
Goldberg Joseph M., 855 North Seventh St.
Goldberg, Maurice, 1408 South Sixth St.
Goldberg, Samuel, 4415 Germantown Ave.
Golden, Henry, 1722 South Broad St.
Goldring, Emil J., 1722 North Eighth St.
Goldsmith, S. Bryan, 247 South Thirteenth St.
Goldstein, A. Otto, 987 North Fifth St.
Goldstein, Joseph, 2429 West Lehigh Ave.
Good, William H., 5309 North Second St.
Goodell, W. Constantine, 300 S. Thirteenth St.
Goodman, Edward H., 248 S. Twenty-first St.
Goodman, Robert, 221 Fitzwater St.
Goodwin, Warren C., 3740 Powelton Ave.
Goos, Harry William, Amber and Dauphin Sts.
Gordon, Alfred, 1812 Spruce St.
Gordon, Benjamin L., N.W.Cor.Broad and Mifflin Sts.
Gordon, S. Finley, 2235 North Thirtieth St.
Goss, Charles, 1316 W. Allegheny Ave.
Graf, Edmund L., 927 South Sixtieth St.
Graham, Edwin E., 1713 Spruce St.
Graham, John, 326 South Fifteenth St.
Grahn, S. Norman, 2011 N. Twenty-second St.
Gray, Alfred P., 4651 Leiper St.
Gray, Clarence H., 1803 Chestnut St.
Gray, Robert L., 3031 North Broad St.
Grayson, Charles P., 262 South Fifteenth St.
Green, Mary J., 707 North Fortieth St.
Green. Max, 1706 South Fifth St.
Greenbaum, Sigmund S., 1103 South 8th St.
Greene, William H., N.W.Cor. 16th and Arch Sts.
Greenewalt, Frank L., 1424 Master St.
Greenman, Milton J., 3618 Woodland Ave.
Gregory, Henry Ward, 6033 Chestnut St.
Griffith, J. P. Crozer, 1810 Spruce St.
Griggs, William C., 558 N. Fifty-eighth St.
Grim, Ella Williams, 46 North Fortieth St.
Grime, Robert T., 618 South Seventeenth St.
Grimes, Charles Henry, 3417 Old York Road.
Griscom, J. Milton, 1925 Chestnut St.
Groff, Charles A., 222 North Thirteenth St.
Groff, Henry C., S. E. Cor. Broad and Venango Sts.
Groff, John W., 3500 North Broad St.
Gross, Samuel, 645 Ritner St.
Guilfoyle, William F., 4014 Chestnut St.
Gummey, Frank B., 5418 Greene St., Germantown.
Guthrie, D. Clinton, 722 N. Fortieth St.
Guthrie, Kenneth S., 182 Monroe St., Brooklyn, N.Y.
Gwyn, Norman B., 20 South Twenty-first St.
Haerer, Frederick J., Drexel Bldg., Chestnut and Fifth Sts.
Haig, Charles R., Jr., 1400 N. Nineteenth St.
Haines, Wilbur H., 1701 Chestnut St.
Hale, George, 29 West Main St., Haddonfield, N. J.
Hall, Annie Bartram, 1415 N. Seventeenth St.
Hallowell, Charles E., 1208 Chestnut St.
Halperen, Abraham D., 2228 South Eighth St.
Hamill, Samuel McC., 1822 Spruce St.
Hamilton, William A., 602 East Girard Ave.
Hamilton, William T., 932 West Lehigh Ave.
Hammer, A. Wiese, 902 North Forty-first St.
Hammond, Frank C., 1729 Arch St.
Hammond, Levi Jay, 1222 Spruce St.
Hammond, Wilbur C., 655 North Twelfth St.
Hand, Alfred, Jr., 1724 Pine St.
Hanna, George C., 4840 Frankford Ave.
Hanna, Hugh, 2843 Diamond St.
Hannum, William, 844 North Twenty-third St.
Hansell, Howard F., 1528 Walnut St.
Harbaugh, Charles H., 1143 South Broad St.
Harbridge, Delamere Forest, Goodrich Block, Phoenix, Arizona.
Hare, Hobart A., 1801 Spruce St.
Hargett, Walter S., 5715 Girard Ave.
Harris, Frank D., 2315 North Seventeenth St.
Harris, Raymond J., 1843 South Broad St.
Harrison, Rose, 1836 South Broad St.
Harte, Richard H., 1503 Spruce St.
Hartley, Harriet L., 1534 North Fifteenth St.
Harton, Julia P., 1721 West Girard Ave.
Hartwell, John H., 3302 North Broad St.
Hartz, Harry J., 1002 Jackson St.
Hartz, William, 2510 West Lehigh Ave.
Hartzell, Milton B., 3644 Chestnut St.
Hassell, Howard W., 2107 Fairmount Ave.
Hatfield-Richardson, Bertha S., 2021 N. 13th St.
Hatfield, Charles J., 2008 Walnut St.
Hawke, Wilfred W., 218 S. Sixteenth St.
Hayes, John Agnew, 1822 Master St.
Head, Joseph, 1500 Locust St.
Hearn, Marion, 700 N. Fortieth St.
Hearn, William P., 2119 Spruce St.
Hearne, Charles S., 1632 Chestnut St.
Hearst, John A., 6043 Germantown Ave.
Hebsacker, William F., 2151 East Cumberland St.
Heck, John A., 1232 North Fifth St.
Heed, Charles R., 1402 Spruce St.
Heilman, Eugene A., 876 Highland Ave.
Heimer, Louis B., 2404 N. Thirty-second St.
Heineberg, Alfred, 1642 Pine St.
Heisler, John C., 3829 Walnut St.
Heller, Edwin A., 1911 N. Broad St.
Henry, Frederick P., 114 S. Eighteenth St.
Henry, J. Norman, 1906 Spruce St.
Henry, Melvin K., 5011 Tacony St.
Herbert, J. Frederick, Flanders Bldg., S. E. Cor. Fifteenth and Walnut Sts.
Herchelroth, J. Grant, 4837 Baltimore Ave.
Herman, J. Leon, 1701 Chestnut St.
Herman, Maxwell, San Carlos, Ariz.
Hermance, William Oakley, 2040 Pine St.
Herrman, Max F., 3703 Old York Road.
Hewish, Edgar M., 2131 Columbia Ave.

Hewson, Addinell, 2120 Spruce St.
Hewson, William, 6041 Drexel Road.
Hibshman, Harry Z., 4006 N. Fifth St.
Higbee, William S., 1703 South Broad St.
Higgate, Wilfred O., 822 North Forty-first St.
Higgins, Frank J., 2229 North Broad St.
Higgins, James C., 225 N. Twentieth St.
Hildrup, Josephine W., Vienna, Austria.
Hilferty, Edward F., 2225 N. Twenty-first St.
Hill, Anthony J., 630 N. Eleventh St.
Hill, G. Alvin, 1524 Chestnut St.
Hill, Howard Kennedy, 339 S. Eighteenth St.
Hinkle, William M., 1323 N. Thirteenth St.
Hinsdale, Guy, Hot Springs, Virginia.
Hirsch, Charles S., S.W. Cor. Ninth and Pine Sts.
Hirschler, Rose, 126 South Seventeenth St.
Hirsh, A. Bern, 22 South Twenty-first St.
Hirst, Barton C., 1821 Spruce St.
Hirst, John Cooke, 1823 Pine St.
Hitschler, William A., 1212 Spruce St.
Hoban, Charles J., 1609 South Broad St.
Hobensack, J. Rex, 1706 Columbia Ave.
Hockaday, Agnes, 24 Pennock Terrace, Lansdowne (Delaware Co.).
Hodge, Edward B., 346 S. Sixteenth St.
Hofkin, Adolph F., 922 North Fifth St.
Holland, James W., 2006 Chestnut St.
Hollingshead, Irving W., 123 S. Eighteenth St.
Hollopeter, William C., 1411 Spruce St.
Holloway, Thomas Beaver, 1819 Chestnut St.
Holmes, E. Burvill, 217 South Forty-first St.
Holmes, John W., 6201 Lansdowne Ave.
Hooker, Richard S., 2116 North Hancock St.
Hopkins, Arthur H., 1804 Pine St.
Hopkins, Frederick M., 817 N. Thirteenth St.
Hopkinson, Oliver, 1424 Spruce St.
Hopkinson, Richard Dale, 217 Summit Ave., Jenkintown (Montg. Co.).
Horgan, Edward, 1833 Chestnut St.
Horne, Joseph A., Oak Lane.
Horne, S. Hamill, 324 South Sixteenth St.
Houghton, Charles W., Wynnewood (Montg. Co.).
Houser, Lewis J., 804 Race St.
Hoyt, Daniel M., 3604 Chestnut St.
Hudgins, J. Paul, 1921 Dickinson St.
Hudson, Harry, 1602 Erie Ave.
Hughes, Elizabeth M., 1924 North Sixty-third St.
Hughes, William E., 3945 Chestnut St.
Hulshizer, Greene R., 1517 N. Fifteenth St.
Hume, John Elias, 900 South Forty-ninth St.
Humphreys, Edward, 1925 N. Twenty-third St.
Hungerbuehler, John C., 1530 N. Franklin St.
Hunsicker, Hanna M., Olney, Philadelphia.
Hunt, Charles Jack, State Capitol, Harrisburg (Dauphin Co.).
Hunt, Laura Emma, 213 South Seventeenth St.
Hunter, John W., 2042 Pine St.
Hunter, Robert John, 342 N. Sixty-third St.
Hurlock, Frank I., 2831 Diamond St.
Husik, David N., 1101 North Forty-first St.
Hustead, Frank Humbert, 5115 Old York Road.
Hutchinson, James P., 133 S. Twenty-second St.
Hutt, William H., 1908 Fairmount Ave.
Huttenlock, Robert E., 1122 East Columbia Ave.
Illman, G. Morton, 3235 North Fifteenth St.
Ingham, Samuel D., 5249 Spruce St.
Ingle, Henry B., 1937 Fairmount Ave.
Ingraham, S. Cooke, 125 Sumac St.
Irwin, James A., 2019 South Broad St.
Irwin, William, 634 Snyder Ave.
Ivy, Robert Henry, 1623 Walnut St.
Jackson, J. Allen, Philadelphia Hospital for the Insane, Pine and Thirty-fourth Sts.
Jacob, Louis H., 141 West Susquehanna Ave.
Jacob, Moses, 1312 South Fifth St.
Jacobs, Leopold M., 1327 North Fifteenth St.
Jameson, Howard Leon, 2133 S. Sixteenth St.
John, Rutherford L., 248 S. Twenty-first St.
Johnson, Elmer E., 2455 N. Thirty-third St.
Johnson, George E., 5441 Chester Ave.
Johnson, Russell H., 18 E.Summit St., Chestnut Hill.
Johnson, William N., 6460 Germantown Ave.
Johnson, William T., 4729 Baltimore Ave.
Johnston, D. Howard, 3809 Chestnut St.
Jonas, Leon, 2253 N. Seventeenth St.
Jones, A. Arthur, 1812 Jefferson St.
Jones, Charles J., 1507 Locust St.
Jones, Clifford B., 5035 Wayne Ave., Germantown.
Jones, Eleanor C., 1531 North Fifteenth St.
Jones, Isaac Hampshur, 1831 Chestnut St.
Jones, John F. X., 1608 North Sixteenth St.
Jones, Thomas E., 145 West Susquehanna Ave.
Jopson, John H., 1824 Pine St.
Judson, Charles F., 1005 Spruce St.
Jump, Henry D., 4634 Chester Ave.
Jurist, Louis, 916 North Broad St.
Kahn, Bernard L., 2125 South Fourth St.
Kalteyer, Frederick J., 1533 Pine St.
Kamerly, E. Forest, Jr., 1130 Spruce St.
Kapp, David, 1322 North Thirteenth St.
Karpeles, Maurice J., 146 W. Chelten Ave., Gtn.
Katar, Felix M., 123 South Thirty-seventh St.
Katzenstein, George P., 1915 North Broad St.
Kaufman, A. Spencer, 254 South Sixteenth St.
Kaufman, Isadore, 1115 Spruce St.
Keating, F. Raymond, 2100 S. Seventeenth St.
Keeler, J. Clarence, 254 South Sixteenth St.
Keely, Henry Edgar, 1640 Green St.
Keely, Robert N., Browns Mills In-the-Pines, N. J.
Keen, William W., 1729 Chestnut St.
Keene, Floyd E., 116 South Nineteenth St.
Kehler, B. Frank, Norwood (Delaware Co.).
Keilty, Robert A., Med. Laboratory, Univ. of Penn.
Keiser, Elmer E., 6933 Tulip St., Tacony.
Keller, Albert P., 136 Race St.
Kellner, Henry C. F., 1337 E. Montgomery Ave.
Kelly, Francis J., 407 South Forty-second St.
Kelly, James A., 1510 N. Seventeenth St.
Kelly, Joseph V., 138 Rector St., Manayunk.
Kelly, Thomas C., 105 School House Lane, Gtn.
Kelsey, Ernest W., 1217 Spruce St.
Kemp, John H., 5447 Christian St.
Kempton, Augustus F., 2118 Pine St.
Kennedy, Daniel J., 2501 S. Nineteenth St.
Kennedy, James W., 241 North Eighteenth St.
Kercher, Delno E., 1534 Pine St.
Kerns, Samuel P., 1432 Diamond St.
Ketcham, Stephen Rush, 1636 Green St.
Kevin, Robert O., 1315 South Fifteenth St.
Kiefer, Walter E., 821 Cooper St., Easton (Northampton Co.).
Kilduffe, Robert, 912 Spruce St.
Killian, Frederick W., 2725 Spring Garden St.
Kimbrough, Grace D., 621 South Sixteenth St.
Kimmelman, Simon, S.W.Cor.8th St.and Snyder Ave.
Kindbom, Hanna, 1507 Poplar St.
Kinne, Howard S., Willow Grove (Montg. Co.).
Kinney, Willard H., 124 South Eighteenth St.
Kirby, Ellwood R., 1202 Spruce St.
Kirk, George W., 1427 Girard Ave.
Kirkbride, M. Frank, 2212 Green St.
Kirkpatrick, Andrew B., 1742 N. Fifteenth St.
Kirschbaum, Helen, 707 Spruce St.
Kitchen, Joseph S., 1526 S. Fifteenth St.
Klapp, Wilbur P., 1716 Spruce St.
Klauder, Joseph V., S.S. St. Paul, American Line, Pier 62, N.Y.C., N. Y.
Klein, Alexander, 321 South Eleventh St.
Klemm, Adam, 1204 West Lehigh Ave.
Kline, Harvey W., 1725 Butler St.
Klopp, Edward Jonathan, 1223 Spruce St.
Klopp, Eli L., Oak Lane, Philadelphia.
Klopp, Peter P., 618 West Lehigh Ave.
Knipe, Jay C., 2035 Chestnut St.
Knipe, Norman L., 701 South Fifty-second St.
Knorr, John K., Jr., 2235 North Sixteenth St.
Knowles, Frank C., 2022 Spruce St.
Knowles, George A., 4812 Baltimore Ave.

Knowles, Mary Gilbert, 1709 Pine St.
Knox, Andrew, 501 East Allegheny Ave.
Koder, Charles A., 2458 North Sixteenth St.
Kohn, Bernard, 1516 North Fifteenth St.
Kollock, Katharine, 1926 Spring Garden St.
Kolmer, John Albert, 927 South St. Bernard St.
Krall, John T., 1421 Chestnut St.
Kramer, David Warren, 262 South Seventeenth St.
Krauss, Frederick, 1701 Chestnut St.
Kremer, Walter H., 5904 Greene St., Gtn.
Krumbhaar, Edward B., W. Mermaid Lane, St. Martins.
Krusen, Wilmer, 127 North Twentieth St.
Kuehner, Howard M., 2174 E. York St.
Kurtz, Arthur D., 2520 N. Twenty-second St.
Kyle, D. Braden, 1517 Walnut St.
Kyle, E. Bryan, 1212 South Forty-fifth St.
Lacy, Henry A., 743 North Seventeenth St.
Laessle, Henry A., 5900 Market St.
Laird, J. Packard, Devon (Chester Co.).
Lammer, Francis J., 2266 N. Nineteenth St.
Lamparter, Eugene, Green Lane (Montg. Co.).
Landis, Henry R. M., 11 S. Twenty-first St.
Landon, Lyndon H., 123 South Thirty-sixth St.
Lane, Dudley W., 2237 N. Twenty-ninth St.
Lane, Peter H., 186 Bethlehem Pike.
Langdon, H. Maxwell, 2018 Chestnut St.
Laplace, Ernest, 1828 S. Rittenhouse Square.
Larer, Richard W., 1407 East Columbia Ave.
Large, Octavus P., 29th St. and Susquehanna Ave.
Latchford, O. Luther, 1607 N. Fifteenth St.
Lathrop, Ruth Webster, 1415 N. Seventeenth St.
Latta, Samuel W., 3602 Powelton Ave.
Lau, Scott W., N.E. Cor. Fifteenth and Ritner Sts.
Lautenbach, Louis J., 33 South Sixteenth St.
Lawrence, Granville A., 1412 West Erie Ave.
Laws, George M., 2033 Locust St.
Leach, Wilmon W., 2118 Spruce St.
Leaman, Enos H., 3406 A St.
Leaman, Henry, 832 North Broad St.
Leaman, Rosh, 1818 Girard Ave.
Leaman, William G., 3700 Baring St.
Leavitt, Frederick H., 1519 Pine St.
LeBoutillier, Theodore, 9 S. Twenty-first St.
LeConte, Robert G., 1530 Locust St.
Lee, Walter Estell, 905 Pine St.
LeFever, Charles W., 1708 Pine St.
Leffmann, Henry, 1839 N. Seventeenth St.
LeGates, Charles A., Mt. Pocono (Monroe Co.).
Lehman, Frederick C., 2501 Columbia Ave.
Leidy, C. Fontaine-Maury, 316 S. Sixteenth St.
Leidy, Joseph, 1319 Locust St.
Lennon, James S., 747 South Seventeenth St.
Leof, Morris V., 1700 North Franklin St.
Leonard, Charles F., 2025 South Tenth St.
Leonard, Edward A., Jr., Phila. Gen. Hosp., Pine and Thirty-fourth Sts.
Leopold, Samuel, 318 South Fifteenth St.
Levan, George F., 733 North Forty-first St.
Levi, I. Valentine, 1736 North Sixteenth St.
Levis, George E., 4523 Frankford Ave.
Levy, David W., 1122 East Palmer St.
Levy, Jacob, 1920 South Fifth St.
Lewis, Bertha, Pembroke Rd., Bryn Mawr (Mont. Co.).
Lewis, Daniel W., 3149 N. Twenty-second St.
Lewis, Fielding O., 261 South Seventeenth St.
Lewis, John Francis, 5522 Cedar Ave.
Lewis, Morris J., 1316 Locust St.
Lichtenwalner-Myers, Sarah, 34 Pomona St., Gtn.
Liggett, Samuel J., 936 West Lehigh Ave.
Lilly, John H., 1553 East Berks St.
Lincoln, Clarence W., Wayne (Delaware Co.).
Lindauer, Eugene, 2018 N. Thirty-second St.
Lippert, Frieda E., 1716 North Eighteenth St.
Lippincott, Edmund N., Oak Lane.
Lloyd, J. Hendrie, 116 S. Twenty-first St.
Lockrey, Sarah H., 1701 Chestnut St.
Lodholz, Edward, 3103 Diamond St.
Loeb, Ludwig, 1421 North Fifteenth St.
Loeb, Victor A., 1622 North Fifteenth St.
Loewenberg, Samuel A,. 1208 Spruce St.
Long, Samuel C., 2134 North Twelfth St.
Long, William H., 4657 Lancaster Ave.
Longaker, Daniel, 1402 North Sixteenth St.
Longaker, Edwin P., 1402 North Sixteenth St.
Longenecker, Christian B., 3416 Baring St.
Longshore, Howard K., 220 South Sixteenth St.
Longshore, J. Bartley, 3150 North Broad St.
Loughrey, Thomas P., 5545 Morton St., Gtn.
Loux, Hiram R., 1819 Walnut St.
Love, Julius D., 315 Pine St.
Love, Louis F., 1305 Locust St.
Lowa, Walter, 653 North Broad St.
Lowenburg, Harry, 1927 North Broad St.
Lownes, John B., 1849 North Nineteenth St.
Lubin, Cecelia, Eighty-fourth St. and Eastwick Ave.
Lucas, Walter S., 2030 Chestnut St.
Ludlum, Seymour D., 216 South Fifteenth St.
Ludy, John B., 247 South Seventeenth St.
Lutz, Hiram L., 5527 Woodland Ave.
Lynch, John J., 4280 Paul St.
Lyon, B. B. Vincent, 1901 Pine St.
Lytle, I. Walter, 1527 North Twentieth St.
McAllister, Anna M., 3503 Baring St.
McAniff, Hugh P., 2413 N. Seventh St.
McCalmont, William S., 746 N. Sixty-third St.
McCarthy, Daniel J., 2025 Walnut St.
McClary, Samuel 3d., 4610 Spruce St.
McCollin, James G., 404 North Forty-first St.
McCollin, S. Mason, 1725 Arch St.
McConnell, Guthrie, Cynwyd (Montg. Co.).
McConnell, James W., 701 North Fortieth St.
McCormick, John A., 1311 N. Nineteenth St.
McCrae, Thomas, 1627 Spruce St.
McCreight, Charles, 2620 North Fifth St.
McCullough, Francis J., 1512 South Tenth St.
McDaniel, Earl L., 1325 Erie Ave.
McDevitt, Charles H., 4552 Wayne Ave.
McDougald, John Q., 1336 Lombard St.
McDowell, James E., 5006 Walnut St.
McDowell, Norris Stanley, 1529 West Columbia Ave.
McDowell, Samuel B., 925 North Broad St.
McFarland, Joseph, 442 West Stafford St., Gtn.
McGinnis, Arthur, Cor. Logan and Greene Sts., Gtn.
McGlinn, John A., 113 South Twentieth St.
McIlvain, Edwin Hulme, 1629 Butler St.
McIntire, Benjamin M., 4843 Baltimore Ave.
McKeage, William, 3131 North Broad St.
McKee, James H., 1212 Spruce St.
McKeldin, Robert A. W., 5342 Catharine St.
McKellar, Ruth Alexander, Philadelphia Hosp. for Insane, Pine and Thirty-fourth Sts.
McKenna, John A., Lansdowne (Delaware Co.).
McKenzie, R. Tait, 26 S. Twenty-first St.
McKinley, Archbald L., 3702 North Broad St.
McLaughlin, John J., 1808 South Broad St.
McLean, John D., 1538 South Broad St.
McLernon, John, 2636 Federal St.
MacCarroll, D. Randall, 2503 South Broad St.
MacCracken, George Y., 612 N. Thirteenth St.
Macfarland, Frank H., 2046 Chestnut St.
Macfarlane, Catharine, 5808 Greene St., Gtn.
MacIntosh, William, 511 Green St.
MacKay, William H. G., 1416 N. Sixteenth St.
Mackenzie, Alice V., 1831 Chestnut St.
Mackenzie, George W., 1831 Chestnut St.
Mackinney, William H., 1701 Chestnut St.
Maier, Frederick Hurst, 2035 Chestnut St.
Major, C. Percy, Tenth St. and Oak Lane.
Makuen. G. Hudson, 1627 Walnut St.
Mallon, Edward A., 1606 N. Seventeenth St.
Manasses. Jacob L., 3110 Diamond St.
Manges, Willis F., 264 S. Sixteenth St.
Mann, Benjamin H., 1603 South Fifth St.
Mann, Bernard, 107 North Sixtieth St.
Mann, James P., 1234 Spring Garden St.
Mann, Victor L., 17 Abbott Rd., Lucknow, India.
Manning, Charles L., 1818 Tioga St.

Mantz, Francis A., 233 N. Eighteenth St.
Marks, Morris, 607 North Sixth St.
Marshall, Clara, 258 South Sixteenth St.
Marshall, George M., 1819 Spruce St.
Marter, Linnaeus E., 1631 Race St.
Martin, Collier F., 1831 Chestnut St.
Martin, Edward, 1506 Locust St.
Martin, Joseph, 2009 Columbia Ave.
Martin, Sargeant Price, 822 West College St., Rochester, Minn.
Martin, William Orlando, 4268 Paul St.
Marvel, Henry V., 4839 Baltimore Ave.
Masland, Harvey C., 2130 N. Nineteenth St.
Massey, G. Betton, 1823 Wallace St.
Mathews, Abel J., Spencer St., West of Old York Rd.
Mathews, Franklin, 905 West Lehigh Ave.
Mathews, William, 728 West Lehigh Ave.
Matlack, Frank S., 1426 Cayuga St.
Mayor, Charles A., 1006 Ritner St.
Mays, Thomas J., 1829 Spruce St.
Megargee, George L., 1 Madison Ave., New York.
Meine, Berta M., 2301 North College Ave.
Mellor, John, 2045 Margaret St.
Mellersh, Alfred H., Lyceum and Manayunk Aves., Roxborough, Philadelphia.
Melman, Ralph J., 933 North Sixth St.
Menah, William M., 143 North Twentieth St.
Mencke, J. Bernard, 908 N. Sixteenth St.
Merrill, William J., 1927 Chestnut St.
Merscher, Harry Leonard, 2217 North Broad St.
Merscher, Washington, 554 East Washington Lane.
Mershon, Oliver F., 2305 Christian St.
Metheny, S. A. Sterrett, 617 N. Forty-third St.
Metzler, Gottfried, Ambler (Montgomery Co.).
Meyerhoff, Irwin S., 1628 N. Seventeenth St.
Meyers, Milton K., 1529 South Broad St.
Michener, Evan W., 3708 North Broad St.
Mill, George, 214 McKean St.
Miller, Albert G., 2150 North Twenty-first St.
Miller, Edwin B., 2351 E. Cumberland St.
Miller, George B., 634 Diamond St.
Miller, Mary T., 313 North Thirty-third St.
Miller, Morris B., 2117 Pine St.
Miller, Ruth Anne, 5031 Woodland Ave.
Miller, T. Grier, 1805 Pine St.
Miller, W. Edward, 122 Main St., Darby (Dela. Co.).
Milligan, Alice H. B., 4620 Kingsessing Ave.
Milliken, Fred H., 3716 Walnut St.
Mills, Charles K., 1909 Chestnut St.
Mills, H. Brooker, 1411 Spruce St.
Minehart, John R., 4821 Germantown Ave.
Missett, Joseph V., S.E. Cor. 63d and Race Sts.
Mitchell, A. Graeme, 1805 Pine St.
Mitchell, Charles F., 342 South Fifteenth St.
Mitchell, Edward K., 710 West Lehigh Ave.
Mitchell, John K., 1730 Spruce St.
Mitchell, William C., 1700 Diamond St.
Mitterling, Stephen, 5741 Baltimore Ave.
Modell, Daniel A., 1217 Fishers Lane, Logan.
Mohler, Henry K., 267 South Fifty-fifth St.
Mongel, Ernest B., 1429 Tioga St.
Montgomery, Charles M., 2210 Locust St.
Montgomery, Edward E., 1426 Spruce St.
Mooney, Thomas H., 2808 Wharton St.
Moore, Albert M., 1229 Ritner St.
Moore, Cyrus C., 2118 North Hancock St.
Moore, Edward J., 1538 N. Fifteenth St.
Moore, Eugene A., 5342 Market St.
Moore, Henry D., 1528 Tasker St.
Moore, John D., 1940 North Broad St.
Moore, Joseph A., 1216 North Sixth St.
Moore, Philip H., 1225 Spruce St.
Moore, William D., 6008 Germantown Ave.
Moorhead, Stirling W., 1523 Pine St.
Moorhead, William W., 1523 Pine St.
Morell, Charles Joseph, 5253 Spruce St.
Morgan, Arthur C., 3118 Diamond St.
Morgan, B. Franklin, Jeff. Hosp., 10th and Sansom Sts.
Morris, Casper, Jr., 2050 Locust St.
Morris, Elliston J., 128 South Eighteenth St.
Morris, J. Cheston, 1514 Spruce St.
Morrison, William H., 8021 Frankford Ave.
Morton, George D., Honeybrook (Chester Co.).
Morton, Samuel W., 1933 Chestnut St.
Moss, Samuel, 321 Pine St.
Mossell, Nathan F., 1432 Lombard St.
Moulton, Albert R., 5431 Locust St.
Moxey, Albert F., 12 East Mt. Pleasant Ave., Mt. Airy, Philadelphia.
Moylan, John J., 228 E. Price St., Germantown.
Moylan, Peter F., 1005 North Sixth St.
Mudgett, John H., 2028 North Thirteenth St.
Mullen, Thomas F., Penn. Hosp., Spruce and 8th Sts.
Müller, Andrew J., 1136 North Third St.
Müller, George P., 1729 Pine St.
Müller, Wm. K., 5231 Greene St., Germantown.
Mullowney, John J., Paxtang (Dauphin Co.).
Mulrenan, John P., 1228 S. Broad St.
Munson, Henry G., 4935 Catharine St.
Murphy, Eugene C., 2201 Spring Garden St.
Musser, John H., Jr., 121 South Twentieth St.
Mutschler, Louis H., 2030 Tioga St.
Myers, Israel, 1504 North Seventh St.
Myers, Tallyrand D., 1521 Spruce St.
Narr, Frederick C., 1636 South Eighteenth St.
Nassau, Charles F., 1831 Chestnut St.
Nead, Daniel W., 934 N. 4th St., Reading (Berks Co.).
Neel, Henry A. P., 3602 Disston St.
Neff, Joseph S., Narberth (Montgomery Co.).
Neilson, Thomas R., 1937 Chestnut St.
Nelson, Wilhelmina T. M., Woman's Hosp., 2137 N. College Ave.
Newbold, Henry A., 3907 Walnut St.
Newcomet, William S., 3501 Baring St.
Newlin, Arthur, 1804 Pine St.
Newmayer, Solomon W., 1834 Girard Ave.
Newton, Robley D., 6137 Vine St.
Nichols, William, 2022 Bainbridge St.
Nicholson, William R., 1731 Pine St.
Nock, Thomas O., 821 N. Twenty-fourth St.
Nofer, George H., 1759 Frankford Ave.
Norris, Charles C., 1503 Locust St.
Norris, George W., 1530 Locust St.
Norris, Richard C., 500 North Twentieth St.
North, Harry U., 6047 Chestnut St.
O'Boyle, Cyril P., 237 N. Fifty-fourth St.
O'Brien, Matthew C., 6377 Sherman St., Gtn.
O'Connell, John A., 2130 Pine St.
O'Drain, Thomas I., 2546 East Allegheny Ave.
O'Hara, Michael, Jr., 2018 Pine St.
O'Harrow, Lydia Marion, Friends Hosp., Frankford, Philadelphia.
O'Malley, Austin, 2228 South Broad St.
O'Neill, Joseph F., 1731 Arch St.
O'Reilly, Charles A., 1829 Chestnut St.
O'Rourke, Timothy M., Med.-Chi. Hosp., 1725 Cherry St.
Oberholtzer, Morris B., Souderton (Montg. Co.).
Off, Henry J., 115 South Twentieth St.
Old, Herbert, Chestnut and Fourth Sts., % Provident Life and Trust Co.
Oliensis, Abraham E., 719 Spruce St.
Olsho, Sidney L., 220 South Sixteenth St.
Orecchia, Ida Beatriz, 1173 South Twelfth St.
Osman, Joseph R., 4001 Pine St.
Osmond, Anna R., Philadelphia County Prison, Tenth and Reed Sts.
Osmond, Martha E., 6952 Torresdale Ave.
Ostheimer, Alfred J., 2025 Walnut St.
Ostheimer, Maurice, 2202 DeLancey St.
Ott, Lambert, 831 North Broad St.
Ottinger, Samuel J., Twelfth and Master Sts.
Outerbridge, George Whitney, 2040 Chestnut St.
Owen, Hubley R., 2046 Pine St.
Owen, John J., 411 Pine St.
Packard, Francis R., 304 South Nineteenth St.
Page, Henry F., 315 S. Sixteenth St.
Paist, Henry C., 1226 North Franklin St.

Pancoast, Charles S., 205 Cooper St., Camden, N. J.
Pancoast, Henry K., Box 203, Bala (Montg. Co.).
Pancoast, J. William, 1611 N. Thirteenth St.
Parish, Benjamin D., 29 South Nineteenth St.
Parke, William E., 1739 North Seventeenth St.
Parker, Edward A., 1940 South Thirteenth St.
Parker, J. Sparks, 6805 Woodland Ave.
Parker, Ray, 6665 Germantown Ave.
Parkinson, William N., 209 North Sixtieth St.
Parrish, Henry, 738 South Fifty-third St.
Parrish, Robert C., 5301 Chester Ave.
Patterson, Francis D., 2103 Locust St.
Patterson, Ross V., 340 South Sixteenth St.
Pearce, Richard Mills, 2114 DeLancey St.
Pearson, John S., 1507 Christian St.
Pease, Theodore N., 5800 Spruce St.
Peck, Elizabeth L., 4113 Walnut St.
Pemberton, Ralph, 2224 Locust St.
Pennock, Walter J., 1422 N. Seventeenth St.
Penrose, Charles B., 1720 Spruce St.
Penza, John G., 921 Federal St.
Pepper, O. H. Perry, 1811 Spruce St.
Pepper, Wilbur L., 3148 Berks St.
Pepper, William, 1811 Spruce St.
Percival, M. Frasier, 2332 South Broad St.
Perkins, Francis M., 232 South Fifteenth St.
Perlman, Horace D., 1932 North Seventh St.
Peter, Luther C., 1700 Oxford St.
Petery, Arthur K., 1536 Diamond St.
Petty, Orlando H., 6215 Ridge Ave.
Pfahler, George E., 1321 Spruce St.
Pfeiffer, Damon B., 2028 Pine St.
Pflueger, Henry F., 1511 North Seventh St.
Pfromm, George W., 1431 North Fifteenth St.
Phelps, George F., 6019 Lansdowne Ave.
Phillips, Horace, % B. Griffith Jones, 905 Land Title Bldg.
Phillips, James R., 1827 South Eighteenth St.
Phillips, Richard J., 123 S. Thirty-ninth St.
Picard, Henry L., 1922 Race St.
Pickett, Elizabeth L., Aldan (Delaware Co.).
Piersol, George A., 4724 Chester Ave.
Piersol, George Morris, 1913 Spruce St.
Pike, Charles P., 7282 Woodland Ave.
Pilkington, Horatio, 4238 Paul St., Frankford.
Pilling, George P., Jr., 4044 Chestnut St.
Piper, Edmund B., 6071 Drexel Road.
Plass, Chas. F. W., Chelten Ave. and Chew St., Gtn.
Podolski, Louis A., 1117 West Lehigh Ave.
Pontius, Paul J., 1831 Chestnut St.
Posey, Wm. C., N.E. Cor. 21st and Chestnut Sts.
Potsdamer, Joseph B., 1818 North Broad St.
Pottberg, Charles, 2338 North Broad St.
Potter, Ellen C., 5138 Wayne Ave.
Potts, Charles S., 2018 Chestnut St.
Powell, William Elwood, 2357 E. Dauphin St.
Price, Charles E., 316 North Fifty-second St.
Price, George E., 1830 South Rittenhouse Square.
Pritchard, William C., 5616 Spruce St.
Propper, Julius, 4502 Baker St.
Purnell, Caroline M., 132 S. Eighteenth St.
Pyle, Walter L., 1931 Chestnut St.
Quicksall, William E., 5121 Baltimore Ave.
Raby, Mahlon R., 5430 Wayne Ave.
Radcliffe, McCluney, 1906 Chestnut St.
Rainear, A. Rusling, 2024 Diamond St.
Ramsay, Robert N., 1124 S. Forty-sixth St.
Ramspecker, Theodore F., 1411 E.Moyamensing Ave.
Randall, Alexander, 1831 Chestnut St.
Randall, B. Alexander, 1717 Locust St.
Ransley, Alexander W., 309 S. Sixteenth St.
Raudenbush, James S., 3633 N. Fifteenth St.
Reber, Wendell, 1212 Spruce St.
Reckefuss, Charles H., Jr., 506 N. Sixth St.
Reddie, Jacobina S., 880 North Forty-first St.
Reed, Howard, 1829 Diamond St.
Reeves, Joseph M., 1916 Spruce St.
Reeves, Rufus Sargent, 1916 Spruce St.
Rehfuss, Martin E., 1934 Chestnut St.
Reiff, E. Paul, 5051 Chestnut St.
Reimel, Clara, 723 West Girard Ave.
Reiner, Alphons J., 2830 Girard Ave.
Reiners, Chas.R., Polyclinic Hosp., 1818 Lombard St.
Reisert, William, 1507 South Broad St.
Reiss, Abe, 910 North Franklin St.
Remig, John H., 805 South Twelfth St.
Repp, John J., 926 South Sixtieth St.
Repplier, Sidney J., 4521 Chester Ave.
Reynolds, Charles B., 2003 Diamond St.
Rhein, John H. W., 1732 Pine St.
Rhein, Robert D., 2016 Pine St.
Rhoads, Edward G., 159 W. Coulter St., Gtn.
Rhoads, John Neely, 1833 Chestnut St.
Rhoads, Samuel, 152 School Lane, Germantown.
Richards, Florence H., 3708 Hamilton St.
Richardson, Neafie, N.E. Cor. Broad and Norris Sts.
Ridpath, Robert F., 2032 Chestnut St.
Riegger, Marie, 909 N. Twelfth St.
Riesman, David, 1715 Spruce St.
Righter, Harvey M., N.E. Cor. 51st and Spruce Sts.
Ring, G. Oram, 2014 Chestnut St.
Ringer, Adolph I., 4512 Regent St.
Risley, Samuel D., 2018 Chestnut St.
Ritter, William J., 1726 Girard Ave.
Rivas, Damaso, Med. Dept., Univ. of Penna., 36th and Pine Sts.
Roberts, John B., 313 South Seventeenth St.
Roberts, Mercedes A., 1144 S. Eleventh St.
Roberts, Walter, 1732 Spruce St.
Robertson, William E., 327 S. Seventeenth St.
Robinson, William D., 2012 Mt. Vernon St.
Robrecht, John J., 3940 Chestnut St.
Roddy, John A., 1604 Pine St.
Roderer, John F., 2426 North Sixth St.
Rodgers, George Ross, 4631 Wayne Ave., Gtn.
Rodman, J. Stewart, 2106 Walnut St.
Rodman, William L., 2106 Walnut St.
Roe, William J., 1322 Locust St.
Rogers, Asa H., 911 West Indiana Ave.
Rommel, John C., 906 Susquehanna Ave.
Roper, William F., 5439 North Fifth St.
Rosenberger, Randle C., 2330 N. Thirteenth St.
Rosenfield, David H., 1610 South Tenth St.
Rosenfeld, Samuel, 1641 South Fifth St.
Rosenthal, Joseph Morris, 700 E. Chelten Ave., Gtn.
Ross, George G., 1721 Spruce St.
Ross, Joseph H., 106 West Susquehanna Ave.
Ross, Thomas C., 1701 Harrison St., Frankford.
Rothkugel, Paul, 2462 N. Thirty-second St.
Rothschild, Norman S., 1832 North Seventeenth St.
Roussel, Albert E., 2108 Pine St.
Rovno, Philip, 423 Pine St.
Rowand, Alex H. C., 3704 Spring Garden St.
Royer, B. Franklin, Donaldson Bldg., Harrisburg (Dauphin Co.).
Rubenstone, Abraham I., 1704 E. Moyamensing Ave.
Ruff, Adolph, 2555 North Eleventh St.
Ruff, William F., 420 Preston St.
Ruffel, Charles E., 244 East Girard Ave.
Rugh, J. Torrance, 1616 Spruce St.
Runkle, Stuart C., 1605 Christian St.
Ruoff, William, 1301 North Thirteenth St.
Rupert, Mary P. S., 1709 Pine St.
Russell, Charles T., Jr., 2521 East Norris St.
Russell, Ella M., 2035 Chestnut St.
Ryan, Maria Page, 1246 South Broad St.
Ryan, William C., 1229 North Eighteenth St.
Ryan, William J., 701 South Fifty-fifth St.
Ryan, William J., 2035 North Twenty-second St.
Saalfrank, Charles W., Second St.Pike andLevick St.
Sailer, Joseph, 1830 Spruce St.
Sajous, Charles E. deM., 2043 Walnut St.
Sajous, Louis T. deM., 2043 Walnut St.
Sallom, Abdullah K., 1625 South Fifteenth St.
Sampson, Allen G., 2834 Columbia Ave.
Santee, Eugene I., 532 North Sixth St.

Sargent, Albert Alonzo, 1308 Pine St.
Sartain, Paul J., 212 West Logan Square.
Saunders, Robert Ritchie, 926 N. Fifteenth St.
Sautter, Albert C., 1421 Locust St.
Savitz, Samuel A., 1825 Tasker St.
Saxon, Gordon J., 5314 Spruce St.
Saylor, Edwin S., 2005 Chestnut St.
Schaeffer, Clarence W., 117 South Twentieth St.
Schaeffer, J. Parsons, 509 South Forty-sixth St.
Schaffle, Karl, Box 417, New Cumberland (Cum.Co.).
Schaller, Abraham L., 820 South Fifth St.
Schamberg, Jay F., 1922 Spruce St.
Schantz, William A., 4533 Old York Road.
Schatz, Harry A., 1331 North Franklin St.
Schaubel, Charles W., 2346 East Norris St.
Scheehle, J. Evans, 1504 Christian St.
Schell, J. Thompson, 1832 Diamond St.
Schenberg, Joseph, 426 North Fifty-third St.
Schetky, Martha G. K., 911 S. Forty-eighth St.
Schetky, S. Elizabeth A., Vienna, Austria.
Schilling, Francis M., 5707 Chester Ave.
Schisler, Belle A., 2835 Diamond St.
Schnabel, Truman G., 1805 Pine St.
Schneideman, Florence Mayo, 1831 Chestnut St.
Schneideman, Theodore B., 1831 Chestnut St.
Schneider, Charles J., 1930 N. Seventeenth St.
Schoales, Charles B., 1428 North Eleventh St.
Schock, Harvey E., 2128 South Broad St.
Schoening, J. Jacob, 1908 North Park Ave.
Scholl, B. Frank, 1420 North Seventeenth St.
Schoonmaker, Irving R., 5223 Chester Ave.
Schumann, Edward A., 15 Pelham Road, Gtn.
Schwartz, George J., 1433 Walnut St.
Schweinitz, George E. de, 1705 Walnut St.
Schweinitz, George Lord de, 2040 Chestnut St.
Schwenk, Peter N. K., 1417 North Broad St.
Scull, William B., 3024 Richmond St.
Seabold, William F., 5617 Spruce St.
Seabrook, Alice M., 22d St. and N. College Ave.
Segal, Bernhard, 1537 South Sixth St.
Seiberling, Joseph D., 1807 Arch St.
Seidel, Victor I., 2338 North Twenty-ninth St.
Seifert, F. Robert, 2202 E. Cumberland St.
Seiler, Minnie Myrtle, 3201 North Randolph St.
Seilikovitch, Solomon, 935 South Third St.
Seiss, Ralph W., 255 South Seventeenth St.
Seixas, Marie A., Stop 17, Santurce, San Juan, P.R.
Service, Charles A., City Ave., Bala (Montg. Co.).
Severs, G. Harvey, 3104 North Front St.
Shaffer, George E., 3608 Richmond St.
Shaham, Simon, Ninth St. and Snyder Ave.
Shallow, Thomas A., 3621 Hamilton St.
Shannon, Charles E. G., 1633 Spruce St.
Shea, William Ker, 1705 N. Eighteenth St.
Sheaff, Philip A., 4008 Baring St.
Shellenberger, Jacob R., 5505 Germantown Ave.
Shepherd, Mary Emma, 1902 Diamond St.
Shepherd, Winfield Beck, 2046 North Thirteenth St.
Shick, William B., 1330 Rockland St., Logan.
Shields, Wm. G., 412 School Lane, Germantown.
Schmookler, Henry B., 1320 South Fifth St.
Shoemaker, George Erety, 1831 Chestnut St.
Shoemaker, Harvey, 2011 Chestnut St.
Shoemaker, William T., 109 S. Twentieth St.
Sholler, George W., 1224 West Lehigh Ave.
Shrom, Ralph E., 1745 North Seventeenth St.
Shuman, George H., 6221 Jefferson St.
Shumway, Edward A., 2007 Chestnut St.
Shurtleff, Henry C., 31 South Fortieth St.
Shute, Harry A., 1408 N. Fifteenth St.
Siegel, Alvin E., 1618 Pine St.
Silverman, Abraham, 930 North Eleventh St.
Simcox, Lawrence, 103 W. Walnut Lane, Gtn.
Simkins, James J., 2002 North Twenty-first St.
Simmons, Clifford F., 1939 Hunting Park Ave.
Simpson, John C., Girard College, Girard and Corinthian Aves.
Simsohn, Joseph S., 909 North Franklin St.
Sinclair, John F., 4103 Walnut St.
Sinexon, Justus, 3243 Chestnut St.
Singer, Benjamin, 1410 North Broad St.
Sinkler, Francis W., 1606 Walnut St.
Siter, E. Hollingsworth, 1818 S. Rittenhouse Square.
Skillern, Penn G., 241 South Thirteenth St.
Skillern, Penn G., Jr., 241 South Thirteenth St.
Skillern, Ross Hall, 2032 Chestnut St.
Skillern, Samuel R., 3509 Baring St.
Skillern, Samuel R., Jr., Thirty-fourth and Pine Sts.
Slaughter, Charles H. P., 1602 S. Broad St.
Slaymaker, John M., 3502 Spring Garden St.
Slifer, George Baringer, 1707 Ritner St.
Small, John Hamilton, 914 South Forty-eighth St.
Small, William B., 2232 Green St.
Smiley, Anne E., 5203 Haverford Ave.
Smith, Alexis D., 5926 Greene St., Germantown.
Smith, Allen J., Thirty-ninth and Locust Sts.
Smith, Caroline E., Perry Bldg., 16th and Chestnut
Smith, Clarence D., 741 Spruce St.
Smith, Clarence N., 842 South Fifty-sixth St.
Smith, David D., 131 W. Coulter St., Germantown.
Smith, Henry A., N.E. Cor. Oxford and 16th Sts.
Smith, Joseph I., 1721 North Seventeenth St.
Smith, J. Melvin, 1598 North Fifty-second St.
Smith, Rolla L., 2987 Richmond St.
Smith, S. MacCuen, 1429 Spruce St.
Smock, Ledru P., 3330 Chestnut St.
Snively, Andrew F., 5300 Market St.
Snively, Robley Dunglinson, 1709 Tioga St.
Snyder, Elizabeth, 2002 Columbia Ave.
Snyderman, Harry S., 1306 North Sixth St.
Sohn, George W., 135 Green Lane, Manayunk.
Somers, Lewis S., 3554 North Broad St.
Sonneborn, George A., 1200 West Erie Ave.
Spaeth, William L. C., 5000 Jackson St.
Spangler, Ralph H., 2217 S. Broad St.
Speese, John, 2206 Locust St.
Speirs, George Campbell, 4831 Baltimore Ave.
Spellissy, Joseph M., 110 S. Eighteenth St.
Spencer, George W., 1734 S. Fifty-eighth St.
Spiegle, Grace E., 2115 North Twelfth St.
Spiess, Walter G., 717 West Allegheny Ave.
Spiller, William G., Chestnut and Twenty-first Sts.
Spitz, Louis, 4112 Girard Ave.
Sprague, Frances R., 1930 Chestnut St.
Sprissler, Theodore, 601 South Ninth St.
Stahl, B. Franklin, 1727 Pine St.
Staller, Max, 1310 South Fifth St.
Stamm, Camille J., 1412 Diamond St.
Starck, Albert A. G., 6046 Christian St.
Starkey, Frank R., 2105 Chestnut St.
Stauffer, Nathan P., 4833 Baltimore Ave.
Steel, William A., 3300 North Broad St.
Steinbock, Frederick W., 1339 N. Thirteenth St.
Steiner, Samuel, 851 North Fifth St.
Steinke, Carl Rossow, 715 North Fortieth St.
Steinmetz, Charles G., Jr., 622 North Fortieth St.
Stellwagen, Thomas C., Jr., 1831 Chestnut St.
Stelwagon, Henry W., 1634 Spruce St.
Stembler, Harry Abraham, 947 North Sixth St.
Stengel, Alfred, 1728 Spruce St.
Stevens, Arthur A., 314 South Sixteenth St.
Stevens, William W., 5722 Chester Ave.
Stewart, Francis E., 11 W. Phil-Ellena St., Gtn.
Stewart, Francis T., 311 South Twelfth St.
Stewart, Helen Montgomery, 2035 Chestnut St.
Stewart, Thomas S., S. E. Cor. 18th and Spruce Sts.
Stiles, Charles M., 1831 Chestnut St.
Stiles, Francis A., 3801 Powelton Ave.
Stimson, Cheney M., 1801 Cayuga St.
Stirk, Jas. C., 734 Yale Ave., Swarthmore (Del.Co.).
Stirling, Samuel R., 1931 East Cumberland St.
Stirling, Warren, 215 South Forty-ninth St.
Stone, Edward R., 1701 Master St.
Stout, George C., 1611 Walnut St.
Stout, P. Samuel, 4701 Chester Ave.

Strauss, Abram, 1226 Spruce St.
Strawbridge, I. Rendall, 1124 Wallace St.
Strecker, Edward A., 4401 Market St.
Strecker, Henry A., 1318 Pine St.
Strittmatter, Isador P., 999 North Sixth St.
Strobel, John, 948 North Fifth St.
Stroup, A. Clarke, 1245 S. Twenty-third St.
Strouse, Frederic M., 1301 North Broad St.
Strousse, Jacob L., 939 North Eighth St.
Stryker, Samuel S., N.E. Cor. 39th and Walnut Sts.
Stuckert, Harry, 2116 N. Twenty-first St.
Sturtevant, Charles N., 4321 Frankford Ave.
Subers, Edith, 2430 Columbia Ave.
Suiter, David L., 218 East Wyoming Ave.
Sutliff, Fred A., 1901 Cayuga St.
Sutton, Howard A., 314 S. Fifteenth St.
Swalm, Charles J., State Hospital for Insane, Norristown (Montgomery Co.).
Swalm, William A., 4913 North Thirteenth St.
Swartley, William B., 6112 Germantown Ave.
Swayne, Eugene, 1726 Wallace St.
Sweet, Joshua Edwin, 301 St. Marks Sq.
Sweet, William M., 1205 Spruce St.
Swindells, Walton C., 2049 Chestnut St.
Swoboda, Richard J., 143 E. Allegheny Ave.
Tallant, Alice Weld, 1807 Spruce St.
Talley, James E., 218 South Twentieth St.
Target, John D., 1112 Jackson St.
Taylor, Charles F., 1520 Chestnut St.
Taylor, J. Madison, 1504 Pine St.
Taylor, Robert F., 2450 Amber St.
Taylor, William J., 1825 Pine St.
Taylor, William L., 1340 North Twelfth St.
Teller, William H., 1713 Green St.
Templeton, John Y., R.D. 2, Portsmouth, Va.
Thissell, Henry N., S.E. Cor. Chelten Ave. and Camac St., Oak Lane.
Thomas, Anne H., 138 South Forty-sixth St.
Thomas, Barton Kathcart, Jefferson Hosp., Tenth and Sansom Sts.
Thomas, Benjamin A., 116 South Nineteenth St.
Thomas, Charles H., 3634 Chestnut St.
Thomas, Eb W., 1833 Chestnut St.
Thomas, Frank W., 27 East Mt. Airy Ave., Gtn.
Thomas, George P., 2113 North Seventh St.
Thomas, T. Turner, 2005 Chestnut St.
Thomas, W. Hersey, 1445 N. Seventeenth St.
Thorington, James, 2031 Chestnut St.
Thornton, Edward Quin, 1331 Pine St.
Thornton, Mary Bickings, 2703 W. Somerset St.
Thrush, M. Clayton, 3705 Spring Garden St.
Tinker, John S., 1836 South Seventeenth St.
Toland, J. Hart, 2526 S. Broad St.
Tomlin, Almer N., 518 North Fortieth St.
Tomlin, Richard E., 2057 North Eighth St.
Topper, John Albert, 5250 Spruce St.
Town, Edwin C., Jr., Narberth (Montg. Co.).
Tracy, Martha, 5138 Wayne Ave.
Tracy, Stephen E., 1527 Spruce St.
Traganza, Frederick, 2009 N. Twenty-second St.
Trau, Philip A., 1520 Diamond St.
Treichler, Elsie Rau, 1721 N. Thirty-third St.
Trotman, James Augustus, 1608 Wharton St.
Tucker, Henry, 2000 Pine St.
Tullidge, George B., 843 N. Sixty-third St.
Tully, Edgar Warren, 2400 North Broad St.
Tunis, Joseph P., 8016 Seminole Ave., Chestnut Hill, Philadelphia.
Tunnell, S. Wilmer, 2742 North Fifteenth St.
Turnbull, Charles S., 1935 Chestnut St.
Turnbull, Frederick C., Medical Bldg., Portland, Ore.
Turner, John B., 1525 Christian St.
Turner, John P., 1302 South Eighteenth St.
Turner, Linton, 450 Lyecum Ave.
Twaddell, Thomas P. H., 4203 Chester Ave.
Tyson, James, 1506 Spruce St.
Tyson, T. Mellor, 1506 Spruce St.
Uhle, Alexander, A., 1701 Chestnut St.
Ulanski, Benjamin, 4330 Wayne Ave.
Ullom, Josephus T., 24 Carpenter St., Germantown.
Ulman, Joseph F., 2629 N. Twenty-ninth St.
Ulrich, George Alvin, 309 South Twelfth St.
Umsted, William M., 2812 Oxford St.
Vail, Wm. Penn, 1700 Walnut St.
Vanderslice, Edward S., 127 South Fifth St.
VanDervoort, Charles A., Flanders Bldg., Fifteenth and Walnut Sts.
VanGasken, Frances C., 115 S. 22nd St.
Van Korb, William, 5623 Wyalusing Ave.
VanPelt, William T., 1528 Spruce St.
Vansant, Eugene L., 1929 Chestnut St.
Vattier, Louis Charles, 5900 West Girard Ave.
Vaux, Norris W., 8901 Germantown Ave.
von Cotzhausen, Louis, 1707 Chestnut St.
von Poswik, Gisela, 513 North Washington Ave., Scranton (Lacka. Co.).
Wadsworth, William S., 207 S. Forty-fifth St.
Wagers, Arthur J., 123 South Forty-fourth St.
Wagner, Wm. Edgar, Maine Sanitarium, Hebron, Me.
Wainwright, Maud, 5203 Walnut St.
Walk, James W., 737 Corinthian Ave.
Walker, John K., 2038 Locust St.
Walker, John T., 1606 North Eighth St.
Wallis, J. Edward, 2642 Richmond St.
Walsh, Joseph P., 736 Pine St.
Walsh, William H., Children's Hosp., 207 S. 22nd St.
Walter, Frederick J., 204 North Thirty-fifth St.
Walters, B. Frank, Jr., Security Bank Bldg., Sioux City, Iowa.
Ward, E. Tillson, 1415 South Broad St.
Warlow, Margaret A., 1718 S. Eighteenth St.
Warmuth, Mitchell P., 1701 Chestnut St.
Watson, Arthur W., 126 S. Eighteenth St.
Watson, Edward W., 38 South Nineteenth St.
Watson, W. Newbold, 636 S. Forty-eighth St.
Watson, Walter W., 1712 Walnut St.
Watt, Charles Channing, Jr., Wayne Ave. and West Hortter St.
Weaver, Albert P., 879 Belmont Ave.
Weber, Edith M. Clime, 5906 North Thirteenth St.
Weber, Harry F., 4601 Wayne Ave.
Weber, Randall J., 2403 North Seventeenth St.
Webster, Aubrey B., 4821 Baltimore Ave.
Weidman, Fred D., 242 N. Sixty-first St.
Weiland, Carl, 617 Vine St.
Weinstein, George L., Summerfield, Ohio.
Weintraub, Sarah L., 1239 South Broad St.
Weisenburg, Theodore H., 2030 Chestnut St.
Weiss, Hervey B., 1920 North Howard St.
Welch, William M., 1411 Jefferson St.
Wells, Charles H., 4175 Mantua Ave.
Wells, J. Ralston, 754 North Fortieth St.
Wells, P. Frailey, S. W. Cor. 40th and Brown Sts.
Wenner, Ellis Bruce, 3805 Baring St.
Wentz, B. Frank, 6602 Woodland Ave.
Wentzel, Mary, 3628 N. Broad St.
Werner, Julius L., 1533 S. Sixth St.
Wessels, Lewis C., 1918 N. Twenty-second St.
West, John W., 1125 Wallace St.
West, S. Leslie, 1735 Diamond St.
Westcott, Thompson S., 1720 Pine St.
Wetherill, H. Emerson, Drexel Hill (Del. Co.).
Weyl, Esther M., 757 North Twentieth St.
Whaland, Berta, 2335 Berks St.
Wharton, Henry R., 1725 Spruce St.
Wheeler, Edwin B., 1919 North Eighth St.
Whetstone, William B., 4820 Chester Ave.
Whitaker, William, 5448 Germantown Ave., Gtn.
Whitall, James Dawson, 2124 N. Twentieth St.
White, Courtland Y., 1808 Diamond St.
White, Frank, 1302 North Broad St.
White, J. William, 1810 S. Rittenhouse Square.

Whiteway, Harold M., 1924 Chestnut St.
Whiting, Albert D., 1523 Spruce St.
Widdowson, Frank R., 1438 North Sixtieth St.
Wieder, Henry S., 2137 North Fifteenth St.
Wiggins, Edward H., 4415 North Uber St.
Wiggins, Susan W., 1918 Wallace St.
Wightman, John G., 2030 Wallace St.
Wiley, Harry E., 1440 South Broad St.
Wiley, Louis Russell, 600 West Olney St.
Wilkinson, Arthur R., 2231 Oxford St.
Willard, DeForest Porter, 1933 Chestnut St.
Williams, Philip F., 121 South Twentieth St.
Williams, Rachel R., Penna. Building, Fifteenth and Chestnut Sts.
Williamson, James, 2101 Tioga St.
Williamson, Katharine A., 254 S. Thirteenth St.
Willits, I. Pearson, 31 West Walnut Lane, Gtn.
Willitts, Charles H., The Rittenhouse, Chestnut and Twenty-second Sts.
Willson, Robert N., Jr., 1827 Spruce St.
Wilmer, Harry B., 6019 Germantown Ave.
Wilson, George, 5000 Walnut St.
Wilson, H. Augustus, 1611 Spruce St.
Wilson, James C., 1509 Walnut St.
Wilson, Oscar H., 4940 Penn St., Frankford.
Wilson, Samuel M., 1517 Arch St.
Winheld, Morris, 943 North Fourth St.
Winter, S. Elizabeth, Inwood Sanitarium, West Conshohocken (Montg. Co.).
Wise, Henry Moses, 1640 Erie Ave.
Wister, James W., 5430 Germantown Ave.
Wojczynski, Leo J., 1121 Shackamaxon St.
Wolf, Wilbert J., 3474 Frankford Ave.
Wolfe, Samuel, 1701 Diamond St.
Wood, Alfred C., 2035 Walnut St.
Wood, George B., 129 South Eighteenth St.
Wood, Horatio C., Jr., 434 S. Forty-fourth St.
Wood, Walter A., 255 South Sixteenth St.
Wood, William Charles, 1907 Chestnut St.
Woodbury, Frank, 218 South Sixteenth St.
Woods, Matthew, 1307 South Broad St.
Woodward, George, 709 North American Bldg.
Woody, Samuel S., Luzerne and Second Sts.
Worden, Charles Beatty, 322 S. Sixteenth St.
Wray, William S., 2007 Chestnut St.
Wrigley, Arthur, 1019 Pine St.
Yaeger, Christian G., 2403 East York St.
Yawger, Nathaniel S., 2005 Chestnut St.
Yeager, George C., 1419 E. Susquehanna Ave.
Youell, George Joseph, 730 E. Allegheny Ave.
Young, Charles Houston, 4813 Baltimore Ave.
Young, James K., 222 South Sixteenth St.
Zall, Bernard C., 923 North Sixth St.
Zentmayer, William, 1819 Spruce St.
Ziegler, S. Lewis, 1625 Walnut St.
Ziegler, Walter M. L., 1418 N. Seventeenth St.
Ziegler, William H., 2031 East Allegheny Ave.
Zimlick, Arthur J., Cor. Green and Harvey Sts., Gtn.
Zimmerman, Mason W., 1522 Locust St.
Zulick, Howell S., 2115 Erie Ave.
Zulick, J. Donald, 1321 Spruce St.

POTTER COUNTY SOCIETY.

(Organized April 5, 1898.)

President...F. Gurney Reese, Coudersport.
V. Pres.....J. Irving Bently, Galeton.
Sec. and
Reporter....Elwin H. Ashcraft, Coudersport.
Treasurer...Robert B. Knight, Coudersport.
Censors.....James T. Hurd, Galeton.
Elwin H. Ashcraft, Coudersport.
Robert B. Knight, Coudersport.
F. Gurney Reese, Coudersport.
Jos. B. Colcord, Port Allegany (McKean Co.).
Com. on Pub.
Policy and
Legislation..Edelbert U. Eaton, Ulysses.
James T. Hurd, Galeton.

Stated meetings second Tuesday in January, April, July and October, at Court House, Coudersport. Annual meeting in January.

MEMBERS (22).

Ashcraft, Elwin H., Coudersport.
Bently, J. Irving, Galeton.
Church, Nathan W., Ulysses.
Colcord, Albert, Port Allegany (McKean Co.).
Colcord, Jos. B., Port Allegany (McKean Co.).
Eaton, Edelbert U., Ulysses.
Farwell, Franklin Pierce, Galeton.
Hart, Henry D., Genesee.
Horn, Levi A., Austin.
Hurd, James T., Galeton.
Jacobs, David E., Oswayo.
Jones, Ross H., Coudersport.
Knight, Robert B., Coudersport.
Laye, Hal A., Galeton.
Meine, Charles, Germania.
Otto, James V., Port Allegany (McKean Co.).
Reese, F. Gurney, Coudersport.
Squires, Walter H., Roulette.
Stearns, John A., Port Allegany (McKean Co.).
Steele, John G., Galeton.
Tassell, William H., Coudersport.
Winlack, Alexander, Shingle House.

SCHUYLKILL COUNTY SOCIETY.

(Organized 1845.)

President...Harry W. Dechert, Orwigsburg.
V. Pres.....John K. Berk, Frackville.
Gouveneur H. Boyer, Pottsville.
Sec. and
Reporter....George O. O. Santee, Cressona.
Treasurer...David Taggart, Frackville.
Censors.....C. Lenker, Schuylkill Haven, 3 yrs.
P. H. Hermany, Mahanoy City, 2 yrs.
J. Spencer Callen, Shenandoah, 1 yr.
Com. on Pub.
Policy and
Legislation..W. T. Williams, Mt. Carmel.
C. Lenker, Schuylkill Haven.

Stated meetings in Pottsville (or elsewhere as may be selected) the first Tuesday of each month. Election of officers in January.

MEMBERS (85).

Auchmuty, John E., Tamaqua.
Bartho, Benjamin F., Mt. Carmel (Northum. Co.).
Beale, John E., Coaldale.
Berk, John K., Frackville.
Berkheiser, Arthur John, Shenandoah.
Biddle, Jonathan C., Ashland.
Binkley, George K., Orwigsburg.
Boord, Paul C., Maryd.
Blazejewski, Stanley W., Shenandoah.
Bowers, Walter G., Schuylkill Haven.
Bowman, Henry C., Gilberton.
Boyer, Gouveneur H., Pottsville.
Bronson, Albert F., Girardville.
Callen, J. Spencer, Shenandoah.
Carlin, Oscar J., Pottsville.
Carpenter, James A., Jr., Pottsville.
Casey, Thomas D., Ashland.
Constein, Rudolph A., Ashland.
Corson, George R. S., Pottsville.
Dailey, John Joseph, McAdoo.
Dechert, Harry W., Orwigsburg.

Dengler, Raymond A., Delano.
Detweiler, Aaron H., Schuylkill Haven.
Donahue, John J., Frackville.
Doyle, William F., Pottsville.
Evans, Harriet I., Mahanoy City.
Fegley, Theodore C., Tremont.
Fenton, Ivor D., Mahanoy City.
Fleming, Arthur B., Tamaqua.
Freudenberger, Katrina, Tamaqua.
Gallagher, John C., Shenandoah.
Gillars, Alexander L., Pottsville.
Gillette, Claude W., Schuylkill Haven.
Gray, Robert B., Port Carbon.
Gruhler, Christian, Shenandoah.
Halberstadt, George H., Pottsville.
Harding, Frederick B., Tamaqua.
Heim, Lyman D., Schuylkill Haven.
Heller, James B., Pottsville.
Hensyl, George S., Mahanoy City.
Hermany, Phaon H., Mahanoy City.
Hoffman, J. Louis, Ashland.
Householder, Merchant C., Pottsville.
Jones, William G., Tamaqua.
Kennedy, Louis T., Pottsville.
Kingsbury, Mary B., Pottsville.
Kramer, Joseph G., Pottsville.
Lenker, Christian, Schuylkill Haven.
Lenker, Robert W., W. Leesport (Berks Co.).
Lessig, James Alfred, Schuylkill Haven.
McCutcheon, Thomas O., Gordon.
Matten, William H., McKeansburg.
Maurer, Elmer H., Ashland.
Miller, Charles D., Pottsville.
Montellius, Ralph W., Mt. Carmel (Northum. Co.).
Moore, George H., Schuylkill Haven.
Moore, John J., Pottsville.
O'Hara, Patrick H., Pottsville.
Renn, Ray H., Tremont.
Rentschler, Walter R., Ringtown.
Ressler, George W., Ashland.
Riley, John D., Mahanoy City.
Roberts, J. Pierce, Shenandoah.
Robinhold, Lewis C., Auburn.
Roth, Victor T., Pottsville.
Ryan, John T., St. Clair.
Ryland, Albanus S., Valley View.
Santee, George O. O., Cressona.
Scanlan, William J., Shenandoah.
Schultz, J. William, Tremont.
Seligman, Abram P., Mahanoy City.
Shifferstine. Edgar E., Coaldale.
Stein, Newton Henry, Middleport.
Stein, William N., Shenandoah.
Stewart, Harry H., Friedensburg.
Striegel, John G., Pottsville.
Taggart, David, Frackville.
Wallace, Hamilton C., Pottsville.
Walter, Frank J., Pinegrove.
Warne, Joseph Lloyd, Pottsville.
Wasley, Harry M., Shenandoah.
Weisner, Edwin E., Tamaqua.
Wertman, Samuel E., Mahanoy City.
Williams, T. Lamar, Mt. Carmel (Northum. Co.).
Williams, Wm. T., Mt. Carmel (Northum. Co.).

SNYDER COUNTY SOCIETY.

(Organized May 18, 1905.)

President...Percival Herman, Kratzerville.
V. Pres.....Milton E. Wagner, McClure.
Sec. and
Reporter....John O. Wagner, Beaver Springs.
Treasurer...Edwin M. Miller, Beavertown.
Censors.....G. Edgar Hassinger, Middleburg.
R. W. Johnson, Selins Grove.
A. Jerome Herman, Middleburg.
Com. on Pub.
Policy and
Legislation..Edwin M. Miller, Beavertown.
Charles N. Brosius, Shamokin Dam.

Annual meeting in January. Stated meetings at 11 A.M. (unless otherwise ordered), the first Friday of each month, at Middleburg, Selins Grove or Beaver Springs, as ordered by vote of the society.

MEMBERS (17).

Brosius, Charles N., Shamokin Dam.
Deckard, John W., Richfield (Juniata Co.).
Decker, Elmer R., Selins Grove.
Hassinger, G. Edgar, Middleburg.
Herman, A. Jerome, Middleburg.
Herman, Percival, Kratzerville.
Johnson, R. W., Selins Grove.
Kanawel, John F., Penns Creek.
Long, Dwight E., Freeburg.
Longacre, William W., Mt. Pleasant Mills.
Miller, Edwin M., Beavertown.
Sampsell, James W., Penns Creek.
Shive, Simon D., McClure, R.D. 1.
Wagenseller, Harry F., Selins Grove.
Wagner, John O., Beaver Springs.
Wagner, Milton E., McClure.
Williams, Edward C., Port Trevorton.

SOMERSET COUNTY SOCIETY.

(Organized October 29, 1889.)

President...George A. Noon, Listie.
V. Pres.....Richard T. Pollard, Garrett.
Sec. and
Reporter....H. Clay McKinley, Meyersdale.
Treasurer...Walter S. Mountain, Confluence.
Censors.....G. F. Speicher, Rockwood.
M. U. McIntyre, Boswell.
Com. on Pub.
Policy and
Legislation..E. F. Hemminger, Meyersdale.
George A. Noon, Listie.

Stated meetings at place selected on the third Tuesday of January, March, May, July, September and November. Election of officers in November and offices assumed at January meeting.

MEMBERS (29).

Berkheimer, George C., Windber.
Bittner, Charles R., Hooversville.
Frantz, Carl W., Confluence.
Hemminger, Charles J., Rockwood.
Hemminger, Edward F., Meyersdale.
Hemminger. J. Ross, Somerset.
Haffner, J. B.
Kimmel, Henry S., Macdonaldton.
Keim, William W., Jerome.
Large, Charles P., Meyersdale.
Lichty, Bruce, Meyersdale.
Livengood. Charles F., Boswell.
Louther, Snyder J. H., Somerset.
McIntyre, Milton U., Boswell.
McKinley, H. Clay, 13 Center St., Meyersdale.
McMillan, William T., Meyersdale.
Marsden, Henry Irving, Somerset.
Masters, George B., Berlin.
Meyers, Herbert P., Confluence.
Moore, Harmar D., New Lexington.
Mountain, Walter S., Confluence.
Noon, George A., Listie.
Pollard, Richard T., Garrett.
Rowe, William T., Meyersdale.
Sass, Frank, Sandpatch.
Shaffer, Charles I., Ralphton.
Smith, Bart James, Windber.
Speicher, George F., Rockwood.
Zimmerman, Henry A., Hollsopple.

SULLIVAN COUNTY SOCIETY.

(Organized August 9, 1907.)

President...Carl M. Bradford, Forksville.
V. Pres.....Theodore Wright, Dushore.
William H. Randall, Laporte.
Secretary...A. J. Bird, Overton (Bradford Co.).
Treasurer...Justin L. Christian, Lopez.
Reporter....George C. Swope, Mildred.
Censors.....Martin E. Herrmann, Dushore, 1 yr.
S. D. Molyneux, Sayre (Brad.Co.), 2 yrs.
Philip G. Biddle, Dushore, 3 yrs.
Com. on Pub.
Policy and
Legislation..Justin L. Christian, Lopez.
George C. Swope, Mildred.
Exec. Com..C. M. Bradford, Forksville.
A. J. Bird, Overton.
P. G. Biddle, Dushore.

Meetings shall be held quarterly, the January meeting to be held in Dushore, the other meetings at time and place to be fixed by vote of the society or by program committee.

MEMBERS (10).

Biddle, Philip G., Dushore.
Bird, Arthur J., Overton (Bradford Co.).
Bradford, Carl M., Forksville.
Christian, Justin L., Lopez.
Davis, Hugh K., Sonestown.
Herrmann, Martin E., Dushore.
Molyneux, Silas D., Sayre (Bradford Co.).
Randall, William H., Laporte.
Swope, George Clarence, Mildred.
Wright, Theodore, Dushore.

SUSQUEHANNA COUNTY SOCIETY.

(Organized November 19, 1838.)

President...Arthur J. Taylor, Hopbottom.
V. Pres.....Fred S. Birchard, Montrose.
Secretary...Edward R. Gardner, Montrose.
Treasurer...John G. Wilson, Montrose.
Reporter....Calvin C. Halsey, Montrose.
Censors.....Fred S. Birchard, Montrose.
Arthur J. Taylor, Hopbottom.
Dever J. Peck, Susquehanna.
Com. on Pub.
Policy and
Legislation..Dever J. Peck, Susquehanna.
Homer B. Lathrop, Springville.
Abram E. Snyder, New Milford.
Exec. Com..Arthur J. Taylor, Hopbottom.
Edward R. Gardner, Montrose.
Dever J. Peck, Susquehanna.

Annual meeting in Montrose the first Tuesday of May. Other meetings, morning and afternoon sessions, first Tuesday of August, October and February at places designated at previous meetings.

MEMBERS (20).

Ainey, Albert J., Brooklyn.
Birchard, Fred S., Montrose.
Blair, A. Stryker, Hallstead.
Caterson, Clarington W., Franklin Forks.
Condon, William J., Susquehanna.
Diller, Warren L., Springville.
Fitch, Alpheus B., Factoryville (Wyoming Co.).
Fry, Harvey M., Rush.
Gardner, Edward R., Montrose.
Halsey, Calvin C., Montrose.
Hooven, H. Hewitt, Harford.
Johnston, Charles A., Harford.
Lathrop, Homer B., Springville.
Miller, Morgan L., Susquehanna.
Park, William E., New Milford.
Peck, Dever J., Susquehanna.
Snyder, Abram E., New Milford.
Taylor, Arthur J., Hopbottom.
Vanness, Clarence N., Hallstead.
Wilson, John G., Montrose.

TIOGA COUNTY SOCIETY.

(Organized 1861. Reorganized January 24, 1896.)

President...William A. DeWitt, Blossburg.
V. Pres.....Matta Berry Longwell, Wellsboro.
Sec. and
Treasurer...Solomon P. Hakes, Tioga.
Rec. Sec....Arland L. Darling, Lawrenceville.
Reporter....Matta Berry Longwell, Wellsboro.
Exec. Com..William A. DeWitt, Blossburg.
Solomon P. Hakes, Tioga.
John C. Doane, Mansfield.
Censors.....John P. Longwell, Wellsboro, 1 yr.
Farnham H. Shaw, Wellsboro, 2 yrs.
Charles R. Smith, Tioga, 3 yrs.

Stated meetings quarterly, commencing in January, the third Friday of the month, at places selected. Election of officers in January.

MEMBERS (36).

Caldwell, Henry E., Wellsboro.
Clark, Edwin E., Knoxville.
Darling, Arland L., Lawrenceville.
Darling, Lewis, Lawrenceville.
Davies, John R., Blossburg.
DeWitt, William A., Blossburg Hosp., Blossburg.
Ditchburn, David T., Arnot.
Doane, John C., Mansfield.
Frisbie, Hiram Z., Elkland.
Gaskill, Samuel A., Covington.
Gentry, Clarence C., Knoxville.
Gentry, John M., Wellsboro.
Genung, Benjamin W., Nelson.
Hakes, Solomon P., Tioga.
Haley, Edward M., Blossburg.
Harkness, Harry C., Mainesburg.
Hobbs, William Henry, Blossburg.
Howland, Harry W., Gaines.
Humphrey, Wilmot G., Elkland.
Kennedy, F. H., Middlebury Center.
Longwell, John P., Wellsboro.
Longwell, Matta Berry, Wellsboro.
Mastin, Nathan W., Wellsboro.
Nye, Orrin S., Rutland.
Patterson, David A., Westfield.
Pritchard, Mahlon R., Westfield.
Secor, John C., Westfield.
Shaw, Farnham H., Wellsboro.
Sheldon, Charles W., Tioga.
Smith, Charles R., Tioga.
Smith, L. Chapman, Lawrenceville.
Vedder, Wentworth D., Wellsboro.
Waters, David C., Covington.
Webb, Clarence W., Wellsboro.
Wheeler, Edith Flower, Gleason Sanitarium, Elmira, N. Y.
Wood, Fred G., Mansfield.

UNION COUNTY SOCIETY.

(Organized July 27, 1904.)

President...Charles A. Gundy, Lewisburg.
V. Pres.....Ralph Steans, Lewisburg.
Sec. and
Treasurer...Amos V. Persing, Allenwood.
Reporter....William E. Metzgar, Alvira.
Censors.....David M. Sampsell, Winfield.
Charles A. Gundy, Lewisburg.
Com. on Pub.
Policy and
Legislation..William Leiser, Jr., Lewisburg.
Amos V. Persing, Allenwood.

Stated meetings in either Bucknell Hall or Bucknell Laboratory, Lewisburg, the third Thursday of

April, July, October and December. Election of officers in July.

MEMBERS (15).

Bikle, Paul H., Mifflinburg.
Dimm, Charles H., Mifflinburg.
Focht, Martin Luther, Lewisburg.
Gerhart, Weber L., Lewisburg.
Glover. Oliver W. H., Laurelton.
Gundy, Charles A., Lewisburg.
Hill. Albert Harrison, Mifflinburg.
Leiser, William, Jr.. Lewisburg.
Matzke, Edith H., 805 E. Seneca St., Ithaca, N. Y.
Metzger. William E., Alvira.
Persing, Amos V., Allenwood.
Sampsell, David M., Winfield.
Steans, Ralph, Lewisburg.
Thornton, Thomas C., Lewisburg.
Wilson, Harry M., New Berlin.

VENANGO COUNTY SOCIETY.

(Organized May 8, 1867.)

President...George B. Jobson, Jr., Franklin.
V. Pres.....Sidney Slater, Oil City.
Sec. and
Reporter....J. Irwin Zerbe, Franklin.
Treasurer...John F. Davis, Oil City.
Censors.....James B. Siggins, Oil City, 1 yr.
W. A. Nicholson, Franklin, 2 yrs.
John B. Glenn, Franklin, 3 yrs.
Com. on Pub.
Policy and
Legislation..John F. Davis, Oil City.
William G. Gilmore, Emlenton.
Frederick W. Brown, Franklin.

Stated meetings on the third Tuesday of January, March, May, July, September and November at 1 P.M., in Franklin or Oil City. Two meetings each year are "outings" and are held at Monarch Park and the State Institution for Feeble Minded. Election of officers in January.

MEMBERS (52).

Black, Burton A., Polk.
Blair, James D., Franklin.
Bolton, Earle W., Oil City.
Borland, John R., Franklin.
Bovard, Forrest J., Tionesta (Forest Co.).
Boyd, Irvin H., Oil City.
Bridenbaugh, Charles S., Emlenton.
Brown, Alexander M., Franklin.
Brown, Charles H., Franklin.
Brown, Frederick W., Franklin.
Cooper, Clifford, Cooperstown.
Coulter, Clarence W., Oil City.
Crawford, John K., Cooperstown.
Cunningham, Paul R., Clintonville.
Davis, John F., Oil City.
Detar, Carm Y., Kellettville (Forest Co.).
Dickey. Elmer L., Oil City.
Dille, George W., Cooperstown.
Dunn, Rose M., Franklin.
Dwyer, James E., Polk.
Foster, Samuel G., Franklin.
Gaynor, Henry B., Polk.
Gilmore, William G., Emlenton.
Glenn, John B., Franklin.
Hadley, John L., Oil City.
Irwin, Thomas A., Franklin.
Jobson, George B., Jr., Franklin.
Kerr, Clinton S., Emlenton.
Kuhns, Edwin Augustus, Emlenton.
McBride, Lewis E., Franklin.
McDowell, Harry F., Franklin.
McDowell, Samuel W., Pittsville.
McKee, M. Ada, Oil City.
Magee, Frank E., Utica.
Moore, Edwin W., 2825 Twenty-ninth St., San Diego, Calif.
Mount, Winnie K., Oil City.
Murdoch, J. Moorehead, Polk.
Nicholson, William Addison, Franklin.
Perrine, Jonathan B., Wesley.
Sellew, Sylvester W., Oil City.
Serrill, W. W., Kellettville (Forest Co.).
Siggins, James B., Oil City.
Slater, Sidney, Oil City.
Spencer, Elwood P., Cooperstown.
Stone, Harry S., Franklin.
Strayer, Jacob P., Oil City.
Thompson, Ardus C., Franklin.
Thompson, Edgar V., Franklin.
Vogan, David Earl, Marienville (Forest Co.).
Waid, John M., Titusville (Crawford Co.).
Wilkins, John C., Oil City.
Zerbe, J. Irwin, Franklin.

WARREN COUNTY SOCIETY.

(Organized 1871. Reorganized Sept. 19, 1881.)

President...Edwin S. Africa, Warren.
V. Pres.....Paul Stewart, Warren.
Charles H. VerMilyea, Russell.
Sec., Treas.
and Rept....William P. Clancy, Warren.
Censors.....Harry W. Mitchell, Warren.
George T. Pryor, Sheffield.
Joseph J. Knapp, Youngsville.

Stated meetings the first Tuesday after second Monday of each month. Election of officers in January.

MEMBERS (52).

Africa, Edwin S., Warren.
Baker, Willis M., Warren.
Ball, Michael V., Warren.
Beaty, Elizabeth S., Warren.
Bennett, George Everett, Corry (Erie Co.).
Bradshaw, George M. B., Sugar Grove.
Briggs, Erwin S., Tidioute.
Brown, Otis S., Warren.
Chapman, LeRoy E., Warren.
Christie, Milton H., Corry (Erie Co.).
Clancy, William Patrick, Warren.
Condit, George S., Warren.
Cowden, Ernest J., North Warren.
Darling, Ira A., State Hospital for Insane, North Warren.
Dunn, Joseph C., Tulsa, W. E., Oklahoma.
Durham, James R., Warren.
Ellsworth, Adelaide, State Hospital, Warren.
Finlayson, Alan, Warren.
Flatt, Anna H. S., Corydon.
Flatt, Clayton C., Corydon.
Frantz, Christian J., Warren.
Haines, Franklin G., Warren.
Hamilton, John W., Warren.
Hay, William H., Youngsville.
Hyer, Irving G., Clarendon.
Keller, David H., Russell.
Kelley, Ernest J., Chandlers Valley.
Kibler, Charles B., Corry (Erie Co.).
Knapp, Joseph J., Youngsville.
MacDonald, Alden B., Warren.
McKee, Edwin D., Warren.
Meals, Roy Clark, Columbus.
Mervine, Robert B., Sheffield.
Mitchell, Harry W., Warren.
Mitchell, Mary P., Warren.
Morton, Harry T., 1201 Terminal St., Peoria, Ill.
Newcomb, Philip, State Hospital, Ossawatomie, Kan.
Noeson, Frank T., Bear Lake.
Paige, Laverne D., Spring Creek.
Pryor, George T., Sheffield.

Robertson, William M., Warren.
Russell, Hiram B., Sheffield.
Russell, John C., Warren.
Schmehl, Charles W., Warren.
Shortt, William H., Youngsville.
Siggins, George, Tidioute.
Smith, Monroe T., Warren.
Stewart, Paul, Warren.
Stewart, Richard B., Warren.
Stoeckle, Charles H., Ludlow (McKean Co.).
VerMilyea, Charles H., Russell.
Weston, Paul, State Hospital, Warren.

WASHINGTON COUNTY SOCIETY.

(Organized May 19, 1855.)

President...Cephas T. Dodd, VanBuren.
V. Pres.....John C. Kelso, Canonsburg.
Sec. and
Treasurer...Albert E. Thompson, Washington.
Reporter....John B. McMurray, Washington.
Librarian...Richard A. Stewart, Washington.
Censors.....Joseph W. Hunter, Charleroi.
William R. Thompson, Washington.
George B. Woods, Washington.
Com. on Pub.
Policy and
Legislation..Charles B. Wood, Monongahela.
Wm. D. Martin, Dunns Station, R.D. 2.
Samuel A. Lacock, Canonsburg.

Stated meetings in rooms of the society, Reed Building, Washington, second Tuesday of every month, except July and August, at 2:30 P.M.

MEMBERS (113).

Alexander, William Horner, Canonsburg.
Ashbrook, Robert L., Washington.
Bell, David Major, 145 Center St., Canonsburg.
Beveridge, David, Washington.
Booth, Alexander Nelson, Bentleysville.
Bowes, Simon C., Canonsburg.
Braden, Leroy W., Ten Mile.
Brehmer, Harrison L., 497 W. Hellam St., Washington.
Burns, William James, Room 424 Washington Trust Bldg., Washington.
Carey, John Herschel, Prosperity.
Cashman, Thomas Francis, Washington.
Cobb, Freeman Floyd, Marianna.
Collier, Ewing L., Roscoe.
Conger, George R., Taylorstown.
Connor, Robert Evert, Hickory.
Cowan, Walter H., Donora.
Cracraft, Charles Clinton, Claysville.
Davis, Alden O., Charleroi.
Day, Minor H., Donora.
Dearth, Olie Post, Washington.
Dickson, William R., McDonald.
Dodd, Cephas T., VanBuren.
Donahoo, J. Frank, Washington.
Donaldson, Arthur V., Avella.
Dunkle, Gaily Barr, Washington.
Eagleson, Robert M., Fredericktown.
Edwards, David Henry, Washington.
Emery, Boyd Alfred, Eighty-four, R.D. 1.
Enos, J. Clive, Charleroi.
Farquhar, Ralph Claude, Monongahela.
Frantz, George B., Coal Center.
French, Edward Ellsworth, Bentleysville.
Geddis, Charles Patterson, Washington.
Gormley, James A., Meadowlands.
Graves, Charles T., Monongahela.
Haines, Dempsey D., Allenport.
Harsha, Charles Lloyd, Canonsburg.
Hart, William Ernest, Washington.
Hays, George K., Monongahela.
Hazlett, Edgar Marion, Washington.
Honesty, Leonard C., Washington.
Hunter, Joseph William, Charleroi.
Johnson, Elbin J., Claysville.
Kelly, George M., Washington.
Kelso, John Calvin, Canonsburg.
Kirby, Harry J., Cokeburg.
Knox, J. Campsey, 420 Trust Bldg., Washington.
Kyle, Edward V., Washington.
Lacock, Horace Mortimer, West Finley.
Lacock, Samuel Allen, Canonsburg.
LaRoss, William Asher, McDonald.
Lewis, David H., Washington.
Lewis, Orville Garret, 841 Jefferson Ave., Washington.
Lewis, William H., Donora.
Ley, Philip A., Donora.
Linn, Charles Francis, Monongahela.
Lutz, Loyal G., Roscoe.
Lynch, Harry Pierce, 140 Main St., Monongahela.
McCall, Willis A., Marianna.
McCarrell, David Leander, Hickory.
McCullough, Wm. John L., 26 E. Maiden St., Washington.
McDonough, Oscar T., Washington.
McElroy, Joseph, Hickory.
McKay, Edwin M., Charleroi.
McKee, George L., Burgettstown.
McKennan, James Wilson, Washington.
McMurray, John Boyd, Washington.
McNinch, James R., West Alexander.
Manning, Milton F., Beallsville.
Martin, William Douglass, Dunns Station, R.D. 2.
Maxwell, John Ralph, Washington.
Moore, Loyal H., Houston.
Murray, Uriah Burton, Washington.
Nesbit, John Calvin, Burgettstown.
Parry, Roger Sammons, 75 Main St., Washington.
Patterson, Frank Iams, 188 Duncan Ave., Washington.
Patterson, Guy Egbert, Washington.
Patterson, John A., Washington.
Paxton, Cornelius P., California.
Prowett, Homer Persell, Washington.
Ramsey, George W., Lone Pine (Washington.R.D.4).
Repman, Harry Joseph, Charleroi.
Reynolds, John M. C., Washington.
Riddle, William Van Eman, Burgettstown.
Ruben, Samuel A., Washington.
Runion, A. LeGrand, Canonsburg.
Sargent, Larry Dodd, Washington.
Scott, Jesse Yeager, Washington.
Snodgrass, Henry Lane, Buffalo.
Spahr, Robert Argyle, West Brownsville.
Sprowls, Jesse Addison, Donora.
Sprowls, John Nelson, Claysville.
Sprowls, William Wilson, Houston.
Stahlman, Frederick C., Charleroi.
Stewart, Richard A., 26 E. Maiden St.. Washington.
Stewart, Robert S., Washington.
Stewart, Robert Vance, Monongahela.
Teagarden, William David, Washington.
Thompson, Albert Ely, Washington.
Thompson, William Reed, Washington.
Throckmorton, Charles Benton, Canonsburg.
Throckmorton, William S., Canonsburg.
Timmons, Joseph M., West Alexander.
Tucker, Gabriel F., Canonsburg.
Veatch, Nicholas Selby, California.
Weirich, Collin Reed, Washington.
Weygandt, William Wilson, Thomas.
Whyte, Harry A., Washington.
Wilson, James H., Coal Center.
Wilson, Thomas Dent Mutter, Washington.
Wolfe, Russell Wilson, Taylorstown.
Wood, Charles Bennett, Monongahela.
Woods, George Brown, Washington.

WAYNE COUNTY SOCIETY.

(Organized May 25, 1905.)

President...Robert W. Brady, Honesdale.
V. Pres.....Harry B. Ely, Honesdale.
Edward W. Burns, Honesdale.
Sec., Treas.,
and Rept....George W. McCafferty, Jr., Waymart.
Censors.....Edward W. Burns, Honesdale.
Harry B. Ely, Honesdale.
Fred W. Powell, Honesdale.
Com. on Pub.
Policy and
Legislation..William T. McConvill, Honesdale.
Oscar J. Mullen, Hamlin.

Stated meetings held the third Thursday of May, July, October and December at location decided upon at previous meeting. Annual meeting in May.

MEMBERS (30).

Appley, William W., Cochecton, Sullivan Co., N. Y.
Bang, Edward Otto, South Canaan.
Bang, Sarah Allen, South Canaan.
Bennett, John E., Starrucca.
Berlin, Allen A., Newfoundland.
Brady, Robert W., Honesdale.
Burns, Edward Ward, Honesdale.
Cook, Alexander Marshall, South Canaan.
Corson, Charles G., Rileyville.
Ely, Harry B., Honesdale.
Fitzsimmons, Thomas C., Waymart.
Frisbie, Frank C., Equinunk.
Gavitte, Edward B., White Mills.
Griffin, Patrick F., Honesdale.
Kenworthy, William B., Milford (Pike Co.).
Lobb, Frederick A., Hawley.
McCafferty, George W., Jr., Farview Hosp., Waymart.
McCafferty, Robert W., Waymart.
McClellan, Henry Joseph, Callicoon, Sullivan Co., N.Y.
McConvill, William T., Honesdale.
Mullen, Oscar J., Hamlin.
Nielsen, Louis B., Honesdale.
Noble, Homer C., Waymart.
Parsells, Charles Wilson, Narrowsburg, Sullivan Co., N. Y.
Powell, Fred W., Honesdale.
Simons, Arthur J., Newfoundland.
Smith, Frank I., Shohola (Pike Co.).
Stevens, William A., 2101 N. Washington Ave., Scranton (Lackawanna Co.).
Voigt, Arno C., Hawley.
White, Harry Cummings, Ariel.

WESTMORELAND COUNTY SOCIETY.

(Organized November 15, 1859.)

President...Wilder J. Walker, Greensburg.
V. Pres.....R. E. Lee McCormick, Irwin.
D. Allison Walker, Southwest.
Sec. and
Treasurer...Myers W. Horner, Mt. Pleasant.
Reporter....D. Allison Walker, Southwest.
Censors.....Claude W. McKee, Greensburg.
Charles D. Ambrose, Ligonier.
Thomas St. Clair, Latrobe.
Ex. Com....Wilder J. Walker, Greensburg.
Myers W. Horner, Mt. Pleasant.
Thomas P. Cole, Greensburg.

There shall be twelve meetings of the society, one each month. All will be held in Greensburg in City Hall, at 2 P.M. on the first Tuesday.

MEMBERS (140.)

Abatticchio, Nicholas, Latrobe.
Ambrose, Charles D., Ligonier.
Ambrose, Jacob T., Ligonier.
Anderson, John S., Greensburg.
Ankney, Edward G., Pleasant Unity.
Aspey, Lewis S., Smithton.
Bailey, Jean C., Greensburg.
Bailey, Louis J. C., Greensburg.
Barkley, John W., Ligonier.
Beacom, Albert A., Mammoth.
Blackburn, Arthur Byron, Latrobe.
Blackburn, Ida E., Greensburg.
Boale, John A., Vandergrift Heights.
Boehm, George, Arona.
Bortz, Walter M., Greensburg.
Brown, Walter E., Montclair, N. J.
Brown, Walter H., Youngwood.
Burkholder, John Lewis, 401 East Washington St., Mt. Pleasant.
Byers, W. Craig, Webster.
Carnahan, Wm. J., 202 Washington St., Vandergrift.
Caven, Alva H., Youngwood.
Clifford, Edward M., Greensburg.
Cochran, Albert M. Salina.
Cole, Thomas P., Greensburg.
Cope, John C., Greensburg.
Cramer, Morgan J., Monessen.
Crawford, John S., Jeannette.
Day, Howard W., Monessen.
Dickson, George M., Adamsburg.
Dunlap, Effie Belle, Ligonier.
Earnest, Simon Peter, Delmont.
Easter, Daniel M., Youngwood.
Emerson, Howard B., Yukon.
Ewing, Alfred E., Youngstown.
Ewing, John H., Delmont.
Ewing, James R., Delmont.
Fairing, John Walker, Greensburg.
Farquhar, David Clifford, Monessen.
Fennell, William L., Salina.
Ferguson, Rutherford Hayes, Hermanie.
Fetter, William H., Scottdale.
Fichthorn, Lewis Leitzell, Avonmore.
Fleming, James C., Scottdale.
Gilbert, Levi T., Scottdale.
Gillis, George Hiram, Youngwood.
Gray, Samuel Brown, Scottdale.
Griffith, Martin E., Monessen.
Hall, George Orbin, Murrysville.
Haughwout, Bert, Derry.
Hess, Oliver I., Scottdale.
Highberger, Harry L., Madison.
Horner, Myers Worman, Mt. Pleasant.
Hunter, William D., Monessen.
Hutton, David S., Smithton.
Inberg, Hannes, Monessen.
Israel, Isaac Joseph, Monessen.
Jack, James Renwick, New Alexandria.
Johnson, J. Barton, Ligonier.
Jordan, David C., Derry.
Katherman, Frank C., Whitney.
Kepple, Adam S., Hannastown.
Kimmel, Harry F., Derry.
Kline, William J. K., Greensburg.
Klingensmith, Thomas A., Jeannette.
Krebs, A. Bryan, Bolivar.
Kreger, Oliver J., Monessen.
Lawhead, James H., West Newton.
Lawrence, J. Stuart, Greensburg.
Leatherman, Daniel I., 215 Pennsylvania Ave., Greensburg.
Leatherman, Kate W., Greensburg.
Lemmon, James Quinn, Latrobe.
Lohr, Floyd D., Derry.
McAdoo, Elmer E., Ligonier.
McClellan, Robert P., Jr., Irwin.
McCormick, R. E. Lee, Irwin.
McDowell, William J., Scottdale.
McKee, Claude W., Greensburg.
McMurray, H. Albert, Youngwood.
McNish, George T., Alverton.
Marchand, John Louis, Irwin.

Marsh, Florence L., Mt. Pleasant.
Marsh, William A., Mt. Pleasant.
Miller, George W., Greensburg.
Miller, Wesley W., Jeannette.
Mitchell, Lou Murray, Pricedale
Montgomery, Mary L., Mt. Pleasant.
Moran, Thomas W., Latrobe.
Murdock, Dennis Ray, Greensburg.
Nealon, Stephen W., Latrobe.
Ober, Bert Frank, Latrobe.
Ober, Irwin J., Greensburg.
Offutt, Lemuel, Greensburg.
Painter, Theodore P., United.
Patton, James M., 147 Jefferson Ave., Vandergrift.
Pierce, Carl F., Greensburg.
Pile, Philip S., Latrobe.
Piper, Ellsner Landis, Export.
Pogue, Frank Milton, Trafford.
Poale, Charles H., Ruffsdale.
Porter, Joseph A., Penn Station.
Portzer, Iden M., Greensburg.
Potts, William Joseph, Greensburg.
Prothero, Harold Ney, Jeannette.
Reed, Joseph M., Derry.
Reese, Leroy J., Bolivar.
Reidt, Urban H., Jeannette.
Ringer, Joseph H., Jeannette.
Robinson, John Q., Jr., West Newton.
Rugh, Carroll Bancroft, New Alexandria.
Seaton, Charles F., Crab Tree.
St. Clair, Thomas, Latrobe.
Sellinger, Bernard L., Monessen.
Shelar, Joseph W., Mt. Pleasant.
Shirey, Charles A., Manor.
Silliman, James W., Bradenville.
Silsley, Nathaniel Eldridge, Scottdale.
Silvis. John S., Harrison City.
Singer, John J., Greensburg.
Sioan, Charles M., Madison.
Sloterbeck, Edgar B., Monessen.
Smith, L. B. Raymond, Jeannette.
Smithgall, Melvin H., Export.
Snyder, Charles E., Greensburg.
Snyder, Oscar B., Greensburg.
Speer, Ross H., Vandergrift.
Stauffer, Harry J., Jeannette.
Stockberger, Harry J., Claridge.
Strickler, Albert W., Scottdale.
Strickler, James P., Scottdale.
Taylor, Charles E., Irwin.
Taylor, William H., Irwin.
Tittle, Harry W., New Florence.
Walker, D. Allison, Southwest.
Walker, Wilder J., Greensburg.
Watkins, Benjamin M., New Derry.
Wenzel, John W., Donegal.
Wilson, Arthur R., Monessen.
Wilson, Louis F., 215½ S. Main St., Greensburg.
Wright, Samuel S., Pleasant Unity.
Wynn, Charles A., Greensburg.

WYOMING COUNTY SOCIETY.

(Organized August 11, 1903.)

President...William B. Beaumont, Laceyville.
V. Pres.....Albert Beilstein, Meshoppen.
Sec., Tres.
and Rept....Herbert L. McKown, Tunkhannock.
Censors.....George M. Kinner, North Mehoopany.
A. D. Tewksberry, Tunkhannock.
Com. on Pub.
Policy and
Legislation..Van C. Decker, Nicholson.
Frank J. Bardwell, Tunkhannock.

Annual meeting in Tunkhannock on the second Wednesday in January. Other meetings, not less than two, to be held as determined by vote of the society.

MEMBERS (18).

Bardwell, Frank J., Tunkhannock.
Beaumont, William B., Laceyville.
Beilstein, Albert, Meshoppen.
Bidleman, Bert E., Tunkhannock.
Boston, Clarence L., Center Moreland.
Decker, Van C., Nicholson.
French, Kennard J., Factoryville.
Gaul, Stuart J., Laceyville.
Harrison, George M., Meshoppen.
Kinner, George M., North Mehoopany.
Lazarus, William W., Tunkhannock.
McKown, Herbert L., Tunkhannock.
Merritt, T. Grey, Mehoopany.
Newton, Charles R., Nicholson.
Niles, Ralph M., Nicholson.
Rauch, George H., Noxen.
Sturdevant, Dennis W., Laceyville.
Tewksberry, Anderson Dana, Tunkhannock.

YORK COUNTY SOCIETY.

(Organized May 11, 1873. Incorporated April 15, 1901.)

(York is the post office when street address only is given.)

President...Arthur B. Shatto, 220 S. George St.
V. Pres.....Frank V. McConkey, 237 S. Pine St.
Benjamin A. Hoover, Wrightsville.
Sec. and
Reporter....Julius H. Comroe, 259 S. George St.
Treasurer...C. W. Eisenhower, 147 S. George St.
Librarian...Israel H. Betz, Pine and King Sts.
Censors.....Horace M. Alleman, Hanover, 1 yr.
G. E. Spotz, 11 E. Market St., 2 yrs.
L. M. Hartman, 148 S. George St., 3 yrs.
Trustees....Joseph H. Bittinger, Hanover.
Samuel K. Pfaltzgraff, 440 W. Market St.
L. H. Fackler, 451 W. Market St.
Ex. Com....Arthur B. Shatto, 220 S. George St.
Julius H. Comroe, 259 S. George St.
Enos S. Mann, Dallastown.
Com. on Pub.
Policy and
Legislation..George E. Holtzapple, George and Princess Sts.
Alfred .A Long, 34 S. Beaver St.
Joseph C. Atkins, Red Lyon.

Stated meetings in York, in Colonial Hotel parlor, first Thursday of each month, at 1 P.M. Election of officers in January. Library third floor of Court House.

MEMBERS (103).

Alleman, Horace M., Hanover.
Atkins, Joseph C., Red Lion.
Bacon, William F., 50 S. George St.
Bahn. George W., Spring Grove.
Barshinger, Martin L., 308 E. Market St.
Bennett, John H., 38 N. Beaver St.
Betz, Israel H., Pine and King Sts.
Bittinger, Joseph H., Hanover.
Bowers, Stewart C., New Freedom.
Bowles, George W., 112 W. King St.
Prodbeck, John R., Codorus.
Brose, George W., 415 W. Market St.
Butz, Raymond E., 103 E. Market St.
Comroe, Julius H., 259 S. George St.
Danner, William D., Glenville.
Delle, Oscar A., York New Salem.
Dice, Laura J., 151 S. Queen St.
Dunnick, J. Nelson, Stewartstown.
Dunnick, Milton Carl, Shrewsbury.

Eisenhower, Charles W., 147 S. George St.
Ensminger, Samuel H., 409 West Market St.
Fackler, Lewis H., 451 W. Market St.
Gable, Isaac C., 46 S. Beaver St.
Galbreath, J. Thomas, Delta.
Gerry, Carl H., Shrewsbury.
Gilbert, John, 373 W. Market St.
Gress, Henry V., Manchester.
Gross, Jacob M., 706 W. Market St.
Grove, Austin M., 452 S. George St.
Hamme, Curtis J., Dover.
Harbold, John T., Yorkana, R.D. 12.
Hartman, Lawton M., 148 S. George St.
Hawkins, Vallie, Fawn Grove.
Hildebrand, Charles G., Loganville.
Hildebrand, Robert A., Glen Rock.
Hoke, Martin, Spring Forge.
Holtzapple, George E., George and Princess Sts.
Hoover, Benjamin A., Wrightsville.
Howard, James H., 137 S. Beaver St.
Hyson, J. Miller, Red Lion.
Jessop, Roland, 500 W. Market St.
Jones, Harry H., 743 E. Market St.
Kain, John B., 414 E. Market St.
Keagy, Charles A., Hanover.
King, Harry B., 257 E. Market St.
Klinedinst, J. Ferdinand, 220 S. George St.
Krout, G. Elmer, Jacobus.
Lau, Robert E., 1354 W. Market St.
Lawson, Thomas A., Dallastown.
Lecrone, Harris R., 305 W. Market St.
Long, Alfred A., 34 S. Beaver St.
Lutz, J. Fletcher, Glen Rock.
McConkey, Frank Vance, 237 S. Pine St.
McCurdy, William H., Delta.
McDowell, S. Ira, George and King Sts.
Mann, Enos S., Dallastown.
May, Charles H., 1207 N. George St.
May, James C., Manchester.
Meisenhelder, Edmund W., 342 W. Market St.
Meisenhelder, Edmund W., Jr., Lincoln and Hartley Sts.
Meisenhelder, John E., Hanover.
Meisenhelder, Robert N., Hanover.
Melsheimer, John A., Hanover.
Miller, Joseph S., 3 East Market St.
Murphy, Jerry C., York Haven.
Myers, Alfred, 333 S. Duke St.
Overmiller, N. Allen, East Prospect.
Pfaltzgraff, Samuel K., 440 W. Market St.
Porter, John W., New Park.
Posey, Benjamin F., Rupp Building.
Posey, David C., Chanceford.
Ramsay, R. Warren, Delta.
Rea, Charles, 107 E. Market St.
Roberts, Sylvan J., Goldsboro, Etters P.O.
Seitz, Clyde LeGrande, Glen Rock.
Shatto, Arthur B., 220 S. George St.
Shearer, Niles H., 249 East Market St.
Shirey, Bernard W., 136 East Market St.
Sieling, Jacob H., 625 W. Market St.
Small, J. Frank, 161 E. Market St.
Smith, Charles H., 507 W. Philadelphia St.
Smith, Wm. Clarkson, 39 W. Market St.
Snyder, Francis J., 342 S. George St.
Spahr, Charles E., 14 W. Market St.
Spangler, Benjamin F., 126 N. Duke St.
Spotz, G. Emanuel, 11 East Market St.
Stambaugh, Elmer S., Thomasville.
Stick, Edward W., Hanover.
Stick, Wesley C., Hanover.
Strack, David, 1557 W. Market St.
Uffelman, Harry W., Windsor.
Venus, Charles H., 817 E. Market St.
Wallace, Nathan C., Dover.
Weakley, William S., 107 N. George St.
Weaver, Louis S., 3 East Market St.
Wentz, Alexander C., Hanover.
Wentz, Parker N., 705 W. Princess St.
Wertz, Theodore H., Hanover.
Williams, Louis V., Mt. Wolf.
Wise, Francis Roman, 3 E. Market St.
Yagle, George N., Red Lion.
Yagle, James L., New Freedom.
Zech, Harry W., 1100 W. Market St.

LIST OF PRESIDENTS OF THE STATE SOCIETY, 1848-1914.

*1848.	Samuel Humes,	Lancaster Co.
*1849.	Samuel Jackson,	Philadelphia Co.
*1850.	Wilmer Worthington,	Chester Co.
*1851.	Charles Innes,	Northampton Co.
*1852.	Hiram Corson,	Montgomery Co.
*1853.	John P. Heister,	Berks Co.
*1854.	Jacob M. Gimmill,	Huntingdon Co.
*1855.	James S. Carpenter,	Schuylkill Co.
*1856.	Rene La Roche,	Philadelphia Co.
*1857.	John L. Atlee,	Lancaster Co.
*1858.	Smith Cunningham,	Beaver Co.
*1859.	D. Francis Condie,	Philadelphia Co.
*1860-61.	Edward Wallace,	Berks Co.
*1862.	George F. Horton,	Bradford Co.
*1863.	Wilson Jewell,	Philadelphia Co.
*1864.	J. D. Ross,	Blair Co.
*1865.	William Anderson,	Indiana Co.
*1866.	James King,	Allegheny Co.
*1867.	Traill Green,	Northampton Co.
*1868.	John Curwen,	Dauphin Co.
*1869.	William M. Wallace,	Erie Co.
*1870.	Samuel D. Gross,	Philadelphia Co.
*1871.	J. S. Crawford,	Lycoming Co.
*1872.	A. M. Pollock,	Allegheny Co.
*1873.	S. B. Kiefer,	Cumberland Co.
*1874.	Washington L. Atlee,	Philadelphia Co.
*1875.	Crawford Irwin,	Blair Co.
*1876.	Robert B. Mowry,	Allegheny Co.
*1877.	D. Hayes Agnew,	Philadelphia Co.
*1878.	J. L. Stewart,	Erie Co.
*1879.	Andrew Nebinger,	Philadelphia Co.
*1880.	John T. Carpenter,	Schuylkill Co.
*1881.	Jacob L. Ziegler,	Lancaster Co.
1882.	William Varian,	Crawford Co.
*1883.	Henry H. Smith,	Philadelphia Co.
*1884.	Ezra P. Allen,	Bradford Co.
*1885.	E. A. Wood,	Allegheny Co.
*1886.	Rees Davis,	Luzerne Co.
*1887.	Richard J. Levis,	Philadelphia Co.
*1888-89.	J. B. Murdoch,	Allegheny Co.
*1890.	Alexander Craig,	Lancaster Co.
1891.	Samuel L. Kurtz,	Berks Co.
1892.	Henry L. Orth,	Dauphin Co.
1893.	H. G. McCormick,	Lycoming Co.
1894.	John B. Roberts,	Philadelphia Co.
1895.	William S. Foster,	Allegheny Co.
1896.	E. E. Montgomery,	Philadelphia Co.
*1897.	W. Murray Weidman,	Berks Co.
*1898.	Webster B. Lowman,	Cambria Co.
1899.	George W. Guthrie,	Luzerne Co.
1900.	Thomas D. Davis,	Allegheny Co.
1901.	Francis P. Ball,	Clinton Co.
1902.	William M. Welch,	Philadelphia Co.
*1903.	William B. Ulrich,	Delaware Co.
1904.	Adolph Koenig,	Allegheny Co.
1905.	William H. Hartzell,	Lehigh Co.
1906.	Isaac C. Gable,	York Co.
1907.	William L. Estes,	Northampton Co.
1908.	George W. Wagoner,	Cambria Co.
1909.	Theodore B. Appel,	Lancaster Co.
*1910.	John B. Donaldson,	Washington Co.
1911.	James Tyson,	Philadelphia Co.
1912.	Lewis H. Taylor,	Luzerne Co.
1913-14.	Edward B. Heckel,	Allegheny Co.

*Deceased.

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ADDRESS.

ADDRESS BEFORE THE BERKS COUNTY MEDICAL SOCIETY AND GUESTS ON THE OCCASION OF TAKING OVER ITS NEW HOME, APRIL 13, 1915.

BY JAMES TYSON, M.D., LL.D.,
Philadelphia.

Naturally at this stage in the drama which constitutes the life of the medical society which has accomplished what you have just consummated, the thought which is foremost is congratulation; and I am sure I echo the sentiment of every medical society in the state, of every medical man in the state, when I congratulate you most heartily on the acquisition of this commodious, convenient and attractive home. It is with a medical society as with a family or business, it is impossible to conduct its affairs satisfactorily without a permanent home, and the success with which these affairs are conducted depends largely on the stability, the convenience and the dignity of such an abode. It is also a truism confirmed by the experience of centuries that the quality of a work or a production depends largely upon the surroundings as well as the facilities which are at the disposal of the workman and I am sure I am within the limits of truth when I say the entire purpose of the Berks County Medical Society will bear a higher stamp from this time forward.

So let us look somewhat into the details of the purposes of your new home. First you will hold here the meetings of your society in a neat and well-ordered hall, adapted to its purpose, from the walls of which look down the portraits of many of the worthies who have preceded you in the organization and proceedings of your society. Here will be read and discussed your papers making contributions to the knowledge of disease and its treatment and to collateral science as well.

From the shelves the books which will give you inspiration are beckoning you to read, to study, to investigate, and to report. Thus we fall naturally to a thought of the library which is probably your most important asset. I do not know to what it amounts at present, but I understand you have already a good many books, a fair nucleus which if properly nursed will grow rapidly. It is remarkable how easy it is to collect books, even comparatively rare books, if every member turn his attention while at home or abroad to the matter. Your librarian should have a love for books, should be a member of the Association of American Librarians and should attend their meetings. He should be familiar with the methods for exchanging duplicates, through the Library Association Exchange. He should have the *Index Medicus* and the Index Catalogue of the Surgeon General's Office. Journals are an important part of a library even more important than books but to be most serviceable they should be fresh and the best way is to make up a journal club and so distribute the journals that each member shall have one or two fresh ones and when they have circulated they should go into the library and be bound. The librarian should have a small salary very early, to compensate him for time taken from his practice and given to the library. Reprints should not be ignored and even duplicates should be accepted. Many of these will be used in making up sets and helping young libraries; the remainder may be sold for old paper. For a very valuable paper in the interest of the medical library I refer you to one on this subject published in the *Bulletin* of the Monroe County Medical Society of New York, February, 1915, by Dr. Lewis H. Taylor of Wilkes-Barre, as well as to what my friend Dr. Wilson will say later in the hour.

A collection of portraits should be a purpose of your library. A portrait is the more valuable the older it is and a collection of portraits of your members is a history of the society. A house like this is admirably adapted to their display and care. Many good portraits are stored among families which do not care for them. In fact they have little value in families and it is only when they form a part of a collection that they become interesting and valuable. It is an inspiration to look up at a portrait of Isaac Hiester, knowing what he accomplished in his busy life of seventy years not only in medicine but also in business and public affairs. Other portraits I understand include those of Dr. Wallace and Dr. Hunter, Dr. Brooke and Dr. Weidman. Others of your officers and members have served you quite faithfully and skillfully enough to have earned a place on your walls for their portraits.

Your new home will subserve, too, the social side of the medical life. I hold that a home like this should at times also be the seat of simple social entertainment, not only for your own pleasure and profit but also for that of the community in which you reside. The relations between the medical profession and the laity are not close enough. They should mingle and coöperate towards the common weal. No better way of bringing them together can be found than by simple refreshments, which need not be expensive. A cup of tea and a sandwich on an afternoon once a month or even twice a month will bring the social world of both sexes to you and they will see your library, your reading room, your lecture hall and whatever else you may have to interest them, and their respect for you will increase. I was once a member of a committee of the College of Physicians of Philadelphia appointed to confer with some financiers of wealth and influence. We met at the college and after the business was transacted we showed them the library, the museum and the lecture rooms. They were astonished and delighted. One of them said, "I thought the college was only a place from which to get trained nurses. I had no idea it was so interesting and useful a place as it is." This, by the way, suggests another purpose which has proved very useful with the College of Physicians, a directory for nurses through which at very short notice a reliable nurse can be secured for an ill patient. This can also be made the source of profit which may be used for adding books to your library. A home like this of which you have become the owners to-day should fill more or less the place of a club house for physicians whose members may drop in to skim over the journals or for a few minutes' chat with a friend over a case or, even for light refreshment.[1]

All these important and interesting offices of the medical society are contributary to one great purpose; *viz.,* the increase and improvement in the quantity and quality of medical knowledge and the elevation of the profession of medicine to the highest plane of its purpose as a guardian of health and healer of ills and infirmities. The importance of this purpose and the difficulties met in its attainment are so well stated by the founder and first president of the Medical Faculty of Berks County, the legitimate forbear of this society, in his inaugural address, delivered August 7, 1824, more than ninety years ago, that I can not do better than quote him. Listen to what he said on that occasion:—

> "The invitation we have virtually given to the profession elsewhere and to the public generally, to mark our origin and observe our progress, imposes upon us new and weighty obligations, in addition to those ordinarily incumbent on the practicing physician. Carefully to observe diseases, diligently to watch their immense variety of symptoms, and faithfully to charge the memory with the effects of remedies, as guides in future practice, are duties indispensable to every practitioner who aims at individual excellence.
>
> "But associated as we now are, for the avowed as well as the substantial purpose of improving medical knowledge in this part of the country, and thereby enlarging our usefulness to the community, more will justly be expected from us in our collective capacity. . . . . .

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[1] While writing this address I learned of a medical society in Philadelphia which has recently acquired a spacious home in which the club idea is combined with the place of meeting and library features. I wrote the president asking whether the club feature was a success and he replied as follows: "We most assuredly find the club feature a great success in securing growth in membership and in promoting sociability and good fellowship among the physicians; and the latter is by no means the least important function of a medical organization. We have a piano, and recently a fine orchestra among our own members; two pool tables, which are well patronized by the doctors,—a tournament now in progress has created a great interest and considerable income to the club; a buffet where members and their friends or other parties can be accommodated with light suppers, etc.; card rooms; library; and, as you saw, a rather good auditorium. On occasions we have the place crowded to full capacity. Our scientific programs, I think I am safe in saying, are not surpassed, taking it the year around by any society in the city, and our membership is growing from all ranks of the profession in the city and surrounding territory."

"The imperfect state of the medical profession in common with all others, its dependence mainly, for improvement, on an accumulation of practical facts and, above all, its immense importance to mankind render it peculiarly incumbent on its members, wherever they may be located, to contribute their aid to its advancement.

"Dispersed, however as we are, in different parts of the country and confined to our respective circles of practice by a pursuit at once ardent and painful, we have little leisure and perhaps less inclination, to commit to paper for the inspection of others, the results of our individual experience and observation. Isolated with regard to our professional brethren, the only competent judges of our merit, and accustomed to the indiscriminate praises of our patients, we are in continual danger of mistaking the reputation we enjoy for actual superiority of skill; while we daily drop in the rear of our contemporaries by neglecting to cultivate those vast accessions of knowledge of our science that so preëminently distinguish the age in which we live. Without the advantages of a free exchange and comparison of knowledge with our brethren in practice, we are inclined to listen to the suggestions of vanity, and imagine ourselves standards of perfection, while we glide into a dull routine of practice, exclusively founded on our limited experience. . . . . .

"Other professions would seem to have the advantage of being better comprehended by the mass of mankind than that of medicine. Law and theology, although abstract sciences, in their extended ramifications, are nevertheless founded in the constitution of human nature. . . . . .

"While the lawyer, therefore, or the divine, may be said to meet with a professional companion in some measure, in every one with whom he is disposed to converse, the physician alone feels himself a stranger in thought, in language and action. Whatever may be his stock of knowledge when he begins his career in practice, he soon discovers, if he was not before aware, that he has been taught a science and a language not intelligible to any one out of his profession.

"To avoid the imputation of pedantry, he retreats within himself, and is in danger of losing not only the principles, but even the very nomenclature of his success. To counteract such tendency by creating a spirit of generous emulation, to elevate the profession by exciting a thirst for general knowledge, and to cultivate a taste for observation and inquiry by combining the efforts and skill of physicians in various parts of the country, are surely objects worthy of our institution."

These are the words of Isaac Hiester, M.D., the founder and first president of the Medical Faculty of Berks County, in his inaugural address referred to. Born in 1785, he died in 1855, aged seventy years. He was for twenty-five years president of the Medical Faculty of Berks County, now the Berks County Medical Society, president of the Reading Railroad Company, of the Gas Company, of the Charles Evans Cemetery and, throughout his life, a public spirited citizen.

It is rare that a paper comprehends so thoroughly the purposes it is intended to cover and suggests so reasonably the means by which they are to be accomplished. It is a classic among medical writings and you will do well to provide for its reading annually on some suitable anniversary.

It is not often that the medical or any profession produces more than one of the type of Isaac Hiester in a community such as was Reading ninety years ago; but this city was more fortunate in having had also Dr. Hiester's no less eminent brother, Dr. John P. Hiester. He was much younger and more delicate (he died at fifty), and less a public man but perhaps more scientific and equally refined and educated, a traveller and author as well. Others less distinguished but no less worthy succeeded these eminent gentlemen in the presidential chair and at least three became presidents of the state medical society (of which Dr. John Hiester was one), while the voice of the society has been constantly heard and respected in the councils of the state society. It behooves you of the present day not merely to live up to the traditions of the society but also to improve upon them.

A fresh impulse has been added to the study and practice of medicine in the last thirty-five years. The increased requirements for admission to the medical schools including broader general education and scientific training, with the more practical teaching methods in the schools themselves including laboratory work, bedside instruction and other hospital duties, are producing physicians of maturer age at the outset of their career and better qualified to share in the responsibilities of the citizen as well as the treatment of disease than formerly after years of practice. This is as it should be, but we must not forget that there is good in the old as well as the new, and that something grows out of long observation and experience which can not be substituted by the most superior laboratory opportunities of the present day. I am anxious that the younger members of our profession should realize this.

It is a good thing to use one's unaided senses as well as the more refined aids to diagnosis. We often do not look at our patients enough with the unaided eye. How often a pleuritic effusion has been overlooked because we have not taken the trouble to remove the man's shirt and look at his chest. How striking is the information instantaneously conveyed by the Corrigan pulse. How helpful the sense of resistance furnished by the solidified lung and how significant the absent fremitus over a large pleuritic effusion. How distinctive the apple-like smell of the acetone breath of the diabetic or the nauseating odor of smallpox. How unmistakable to the ear is the rapid grunting of the patient with croupous pneumonia. Other information comes to the thoughtful, well-informed physician who simply looks at his patient, and thinks as he watches. To be a good doctor he must be, as it were, saturated with his patient, be absorbed by him. The old doctor may not have a stethoscope but he has his ears, which are often better; he may not have a sphygmomanometer but he has his finger ends; he may not be able to time a presystolic murmur but he knows the meaning of a cyanotic face and the air-hunger breathing.

I am not decrying laboratory methods or exact mechanical measurements and tracings. Use these and get all you can out of them. They are the submarines and air ships with which we are waging the war against disease; but do not overlook the older aids to diagnosis which train the observation and develop the character of the observer, planting also the seeds of intuitive diagnosis of surprising accuracy, bearing in mind that you may be working shoulder to shoulder with the spiritual body of a Hippocrates, a Sydenham, a Louis, a Stillé or a DaCosta.

FOR PERSPIRATION OF THE FEET.

Bathe the feet with cold water each night and apply one of the following prescriptions. Change stockings frequently.

℞ Acid salicylici,	gr. xlv.
Pulv. amyli,	ʒv.
Pulv. talc,	ʒxxij.

M. Sig.: Dust over the feet after they are thoroughly dry.

℞ Potassium permanganate,	x to xxx.
Aquæ,	℥viij.

M. (This will stain bedding.)

℞ Acid. salicylici,	ʒiij.
Alcohol,	℥ss.

M.

ORIGINAL ARTICLES.

THE INDICATIONS FOR THE OPERATION FOR STRABISMUS.

BY WENDELL REBER, M.D.,
Professor of Diseases of the Eye in the Philadelphia Polyclinic, and in the Medical Department of Temple University, Philadelphia.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

In spite of all that has been written concerning the surgical treatment of strabismus (or esotropia), there still seems to be much diversity of opinion concerning the indications as to when to operate for esotropia and how.

Several factors enter into the discussion of this question, chief among which may be mentioned the following: (1) Whether the patient is a dispensary or a private one, (2) the age of the patient, (3) whether the orthoptic treatment has been completely carried out, (4) whether the strabismus is monocular or binocular, (5) the rotational power of each eye individually and its behavior in association with its fellow. Each of these factors has some manner of bearing on the final decision as to whether operation shall be done, also as to when and how.

1. *Whether the patient is a dispensary or a private one.* This has more bearing than appears on the surface. If a strabismic patient is seen in private practice the case can be much more closely studied and kept under observation. The final result will be more and better data on which to base conclusions as to operation; in a small percentage of such cases, faithful pursuance of nonoperative methods may finally render operation unnecessary. This does not refer to esotropia in little children (of the nonparalytic or congenitally paretic variety) which if taken in hand between the third and fifth years can in a goodly majority of cases be brought to approximate parallelism on orthoptic measures alone.

In dispensary work the most that can be accomplished in the average case is an accurate refraction to be worn for a couple of months. If at the end of this time the deviation amounts to fifteen degrees or more, operation presents itself as the likeliest solution of the question or the patient drifts away from observation. In this same class may be included those patients that live at a distance for they have to be managed on much the same principles. In short, dispensary patients and those coming from a distance will be dealt with in a more summary fashion while those under private observation may well go longer without operation. This brings us to the consideration of the second factor.

2. *The age of the patient.* This is a weighty factor. Other things being equal, we might well wish that every strabismic that comes for operation should be at least fourteen to sixteen years old. The operator then enjoys the following advantages: (*a*) The refractive side of the problem has in all probability been pretty well worked out; (b) the patient's cranium will have taken on more or less of its adult characteristics, although some outward swing of the long axes of the orbits frequently goes on up to thirty years of age; (c) the eyeball itself with its attached muscles will have attained the adult size, so that the indications as to the amount of deviation and results to be expected from operation are far more certain; (*d*) often the patient has gained no little power with the externi by this time, which will greatly alter the amount of effect to be gained by operation, (*e*) finally and most important of all the operation at this age can be done under local anesthesia, an advantage equal to all the others combined in that it is done while the patient is conscious and the extraocular muscles are under their normal innervation and control. The result in certainty of decision on the part of the operator and exactness of adjustment of operation leave little to be desired.

All this would be very well were it not for other considerations. For instance, many parents are unwilling that their children should go to puberty with so marked and conspicuous a deformity. If the surgeon is fair to himself he will explain to these parents that while operation may be resorted to at any age, no such certainty as to final result can be assured as if they are willing to wait a few years longer.

There is a class of strabismics in whom early operation (even as early as the third to the fourth year) may be justifiably performed; namely, those little children in whom congenital paresis or palsy of one or more of the extraocular muscles reveals itself clinically as a strabismus convergens (or rarely divergens). Orthopedic treatment avails little in these cases and it were better to do an operation even if it effects only an approximate straightening of the eyes, which can be made more exact if need be when adult life is reached. This rule will apply also in those few cases of true alternating esotropia occurring in little children.

3. *Whether the orthoptic treatment has been properly carried out.* This is no small matter. Recently I had occasion to study a case in the person of a young woman who was the subject of three and a half to four diopters of compound hypermetropic astigmatism in each eye. In childhood tentomy of each internus had been done with a beautiful surgical result. She consulted me on account of asthenoptic symptoms and when only one half her spherical correction was placed before each eye, there was a deviation in the direction of divergence of fifteen to twenty degrees, and with a full correction it sometimes reached thirty degrees! Had the orthoptic side of this problem been properly dealt with in childhood, there is no telling how little surgical interference would have been necessary; possibly none at all. Even after six months' training of her convergence and binocular vision it has been impossible to crowd on more than one diopter of sphere without producing diplopia for infinity. We are therefore, decidedly adverse to operation in any case until a proper refractive correction has been arrived at, and training of binocular vision has been attempted with the stereoscope, amblyoscope and diploscope, bar reading, etc.

4. *Whether the strabismus is monocular or binocular (alternating).* Many considerations enter into this phase of the subject. First of all we need some clear conceptions as to what constitutes monocular and binocular strabismus.

True alternating strabismus is comparatively rare. By this is meant that form of strabismus in which the patient enjoys practically full vision in each eye and can voluntarily fix with either eye. Obviously there is complete absence of the fusion faculty in this type of cases and as we have above stated, they may be operated early in life (anywhere from the fifth year on).

When we approach the so-called monocular type the case is different. In the true monocular type, there is good vision in the fixing eye which fixes constantly and poor vision in the deviating eye, which deviates constantly.

But the term monocular strabismus has been made to cover two types that ought for surgical reasons to be separated, on the following basis: If the deviating eye has vision of less than 5/20 or 40/80 (a visual fraction of ¼) it can be said to be amblyopic in the sense that it does not partake in reading, writing or sewing. I drew attention to this fact at the York meeting of the Medical Society of the State of Pennsylvania in 1904 in a "Clinical and Statistical Study of Convergent Strabismus." If, therefore, a patient's fixing eye presents vision of 5/6 or 5/5 and the deviating eye vision less than 5/20, we are dealing with the true type of monocular or unilateral strabismus. If however, the vision of the deviating eye is better than 5/20, then that eye can at times take part in reading, writing or sewing and occasionally the better eye will deviate. This then is not a true monocular type. Indeed it verges on the binocular type and it seems to me should become known as the incomplete binocular type.

We have then to deal with three types of functional strabismus; namely, (1) true alternating strabismus, (2) incomplete binocular strabismus, (3) true monocular strabismus.

If this matter has been gone into somewhat in detail, it is because of my conviction that the decision as to how our surgery shall be directed in strabismus turns on this classification. For instance, in true alternating strabismus the surgery should generally be divided between the two eyes.

In incomplete binocular strabismus the surgery ought generally to be divided between the two eyes.

In true monocular strabismus the surgery ought generally be confined to the deviating eye. If necessary the fixing eye can be attacked later. (There are some exceptions to these rules that will be noted under the factor rotations.)

The rules just set forth are but general rules. The decision, for instance, in true alternating or incomplete binocular strabismus as to whether double tenotomy or double advancement shall be done remains one of the great questions to-day in the surgery of strabismus. This should not be so if the two following elements are given due consideration.

First. The age of the patient. Clinically nothing is more apparent than the preponderance of convergent forces in childhood and young adult life, and the ascendency of the divergent forces after about the thirtieth year. Necessarily the activity of the accommodative apparatus in the first three decades of life has much to do with this status. But it is precisely because of this association that I feel that the divergent forces should be increased in the young people who come for operation and the practice of doing advancements is justified. Every time a muscle is divided, the eye slips forward to a certain extent out of the grasp of the extraocular muscles. Every time a muscle is shortened or advanced the grasp and control of the extraocular muscles over the eye is increased. Further argument is added to the plea for advancement by a study of the ocular rotations and this brings us to

5. *The rotational power of each eye individually.* There is no one factor that will afford more precious information in a case of strabismus than a study of the ocular rotations and in my opinion there is no factor that has been more consistently overlooked. This can be done roughly by having the patient follow the surgeon's finger into the temporal field and observing whether the eye follows smoothly or jerkily and how far. If the outer limbus of the cornea can not be carried near to the outer canthus easily, the temporal rotation is not more than thirty to thirty-five degrees of arc when it should be forty-five to fifty degrees. This method can be refined by seating the patient at the perimeter, the arm of the perimeter being in the horizontal position. A small electric light is then moved along the arc of the perimeter temporal-ward. As long as the corneal image remains in the center of the pupil, the eye is being rotated. The moment the corneal image passes to the temporal side of the pupillary center the eye is no longer being rotated and this point can be noted on the arm of the perimeter, generally about twenty-five to thirty degrees. Of course the instrument of greatest accuracy in making this observation is the tropometer and I am devoted

to its use in such cases. Those who have no tropometer can easily resort to the perimeter as above outlined, but no case of convergent strabismus should be approached surgically without a study of the temporal rotations. I am persuaded that many advancements would now be done instead of tenotomies if the temporal power of rotation were previously studied. In alternating strabismus temporal rotation will usually be found markedly deficient in both eyes. In incomplete binocular strabismus the same status usually obtains, the temporal rotational power commonly failing more in the eye with poorer vision.

In true monocular strabismus the temporal rotational power of the fixing eye is often practically normal, while that of the deviating eye is likely to be quite deficient.

Other things being equal, the older the patient when he comes to operation the poorer is the temporal rotation, because the converging muscles have been allowed to drift into a chronically spastic state and the externi have become structurally weakened.

There is no royal road to correct diagnosis but if cases of functional strabismus are studied with these five points in view I believe the indications as to operation will in the great majority of cases be perfectly plain. In some adults who have fair temporal rotation and who object to the two weeks of incapacity that advancement necessarily imposes, a skillfully performed tenotomy is not only permissible but often advisable, as but two to three days are lost in this way. In young people with whom time is not a factor, advancement should be given the preference.

Some workers object to advancement, that they have not secured the results claimed by other workers. This is most probably because they have operated under general anesthesia in which case nothing but an extended experience will guide one. If they will operate on such cases under local anesthesia, they will get as fine results as any other operator. This presupposes the use of conjunctival anesthesia in the usual manner (one or two drops of the anesthetic solution in the conjunctiva every three minutes for five instillations) and then the introduction of about five minims of the anesthetic solution with a hypodermic needle under the conjunctiva over the muscle to be attacked. After waiting ten minutes longer one may proceed to the advancement without fear of inflicting upon the patient any acute pain. Necessarily the patient must be fourteen years of age or over to permit employment of this method but as we seldom operate before this age in functional strabismus we employ this method in almost every case.

One other point in closing: After advancement operations on one or both eyes, it is essential that both eyes remain bandaged for at least three days. Less than this is likely to invite defeat. This last summer while in Paris, Landolt told me that he never allowed the bandages to be permanently removed before the eighth day. This may seem rather extreme but Landolt has done many hundreds of advancements in his time and his dictum is not to be lightly regarded.

DISCUSSION.

Dr. Howard F. Hansell, Philadelphia: Dr. Reber has dealt logically with the essential points of a subject of difficulty and importance to every oculist. In few affections of the eye is there the same uncertainty as to the two questions: Is operation indicated and, if so, what shall be its character? Decision depends, as has been well stated, on many factors and can be reached only after a consideration of all and a thorough trial of some. Theoretically, no operation on the muscles is indicated in esotropia. In all functional squints the primary cause to be looked for is in the ocular nerves or in their basic ganglia. The muscles act only in response to their bidding. If we could operate on the brain and readjust the cells and fibers so that the proper degree of fusion force could be developed, and this cerebral action be sent down by the motor nerves so that coördination should be perfectly accomplished, we would be acting on the source of the trouble. It must be remembered that the simultaneous and equal action of the contracting muscles, and just the right degree of relaxation of the opposing muscles is a complicated process involving twelve muscles and several cranial nerves. To attempt to repair manifest incoördination of all this living machinery by the separation or the advancement of a muscle, or even two of them, without first of all attempting to adjust the nervous forces, seems an inconsiderate and futile procedure. Dr. Reber is right in advising resort to all developmental methods before operating.

Notwithstanding the theoretical objections the failure of nonsurgical measures compels operation in at least two classes of cases of internal strabismus; namely, those of alternating or binocular squint of high degree, those of monocular squint which are without exception complicated with real amblyopia. In external squint of high myopia or resulting from extensive internal muscle tenotomies or hypertropias, nonparalytic, and too high for prism correction, operation is indicated. The advisability of operating in congenital paresis at an early age may be questioned. No additional contractile power can be given to a paralyzed muscle by advancement or resection. Here the fault is indubitably a nerve failure and not a functional incoordination, and operation should be postponed until the deformity becomes a handicap to success in life. The presence of amblyopia is a guide as to the eye to be surgically treated and in a measure to the character of the operation. It is, to my mind, not at all clear what responsibility may be justly attributed to monocular amblyopia as a factor in the strabismus. Alone, it does not determine internal squint. Combined with hyperopia it determines the squinting eye. It precedes the squint but does not cause it. It is not the result of nonuse.

In my experience I can not recall a single instance in which amblyopia has increased with the years, excepting when other abnormalities have complicated it. In adult life an eye that is not used in binocular vision becomes divergent, not convergent. In operating we try to secure two objects: (1) Binocular vision; (2) cosmetic. The former is nearly always obtained in the alternating, never in the monocular form. Only late in the course of internal strabismus can we speak of muscles that are too weak, or muscles that are too strong, excepting relatively. Early, or in the formative stage, creation or restoration of coordination by nonsurgical methods is the desideratum, and operative measures are to be deferred until the last.

ARTHROPLASTY.

BY STEWART L. MC CURDY, M.D.,
Pittsburgh.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 23, 1914.)

The restoration of functional usefulness of a joint after mobility has been destroyed, whether the condition is due to an injury or to disease, is one of the aims of modern surgery. Before attempting to describe the methods of treatment it is highly proper to mention the elements which enter into the impairment of free motion of a joint.

First, when it results from fractures extending into the joint and there is displacement of the fragments which lock, and interfere with motion. There is usually a perfect synovial sac.

Second, when the ankylosis is due to disease, as infective synovitis, notably of gonorrheal origin. The bones themselves are perfectly normal, but free motion is prevented because of adhesions between the various synovial reflections.

Third, when it results from destructive bone disease, as of tubercular origin, where there may be a combination of the two conditions above recited; that is, a destruction of bone, which would interfere with normal angulation, as well as a destruction of synovial membrane surrounding the joint, with adhesions between the reflections.

Fourth, as a result of injuries to the bone and muscles close to the joint, causing the muscles to become intimately adherent to the in-

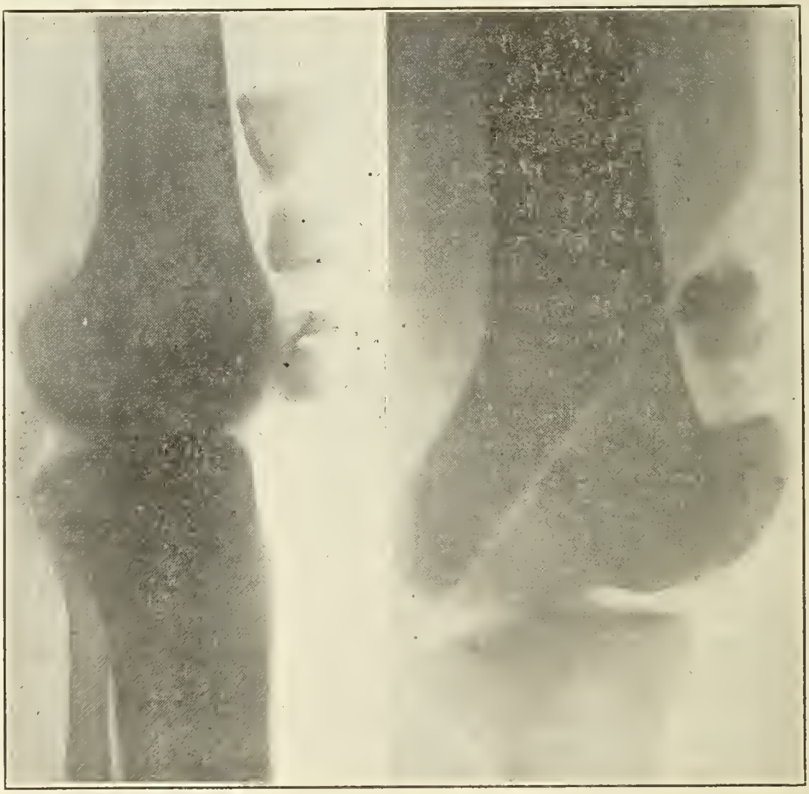

Figure 1. Represents fractures of the patella in Case 1 before the first operation.

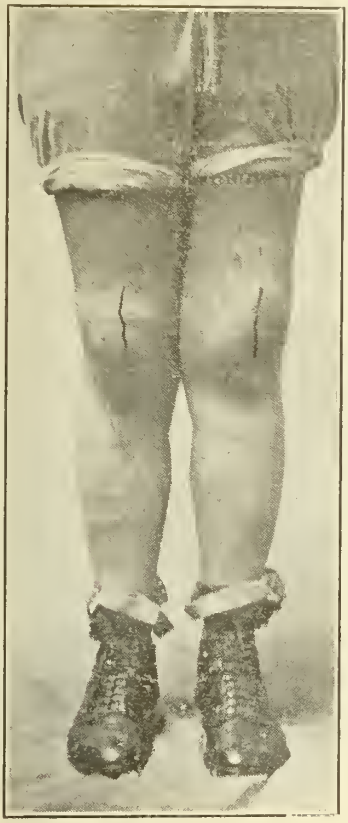

Figure 2. Represents the legs in complete extension, showing the median incision, which preserves the lateral circulation to the fragments and guarantees more satisfactory union.

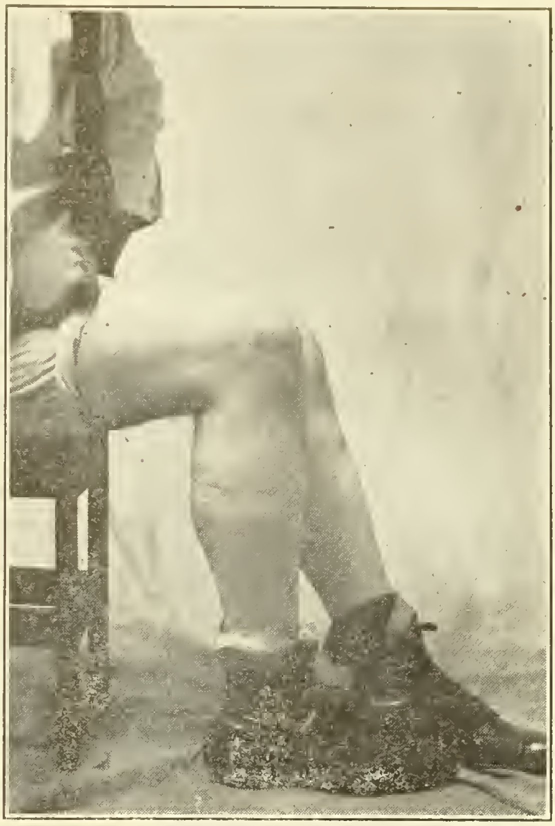

Figure 3. Range of motion in the right leg is 90 degrees and in the left, about 80 degrees. Range of motion is increasing and will be better in a short time.

jured area and preventing free motion, as shown in one of the cases reported where there was a fracture of the femur, which involved the reflection of the synovial sac underneath the patella and quadriceps, the inarticulate cartilage in the joint being normal.

The operations which have been devised for the restoration of functional usefulness of joints have been based upon an effort to reestablish the joint surfaces opposed to each other on the two sides of the joint, thus preventing either fibrinous or osseous reunion. Any method of treatment which will accomplish this purpose would appear to be acceptable.

To say that it is in all instances possible to restore perfect functional usefulness is making the statement entirely too strong. Various operators have reported brilliant results, but we have not seen a report of all of the operations with a recitation of the failures. The aim to be accomplished is the restoration of joint surfaces and fascia so as to permit free motion, and surgeons have used various methods to accomplish this purpose. No one method is applicable in all cases, and it is not to be expected that operators could be successful in every case no matter what method is used.

The following is from a paper by Allison and Brooks on "Experimental Arthroplasty":—

"Helfrich (1) is credited with the first success with the interposition method. In 1893 he exhibited to the Twenty-third Congress of German Surgeons a child who had regained motion in bony ankylosis of the temporomaxillary joint after the interposition of flaps of temporal muscle. The use of muscle flaps was rapidly extended to other stiff joints by Rochet, Hoffa, Nelaton and others. Gluck (2) made use of skin flaps, Chlumsky (3) and Hoffa (4) have used non-absorbable substances, such as plates of magnesium, silver, tin, celluloid and rubber, and later Hoffa used decalcified bone. J. B. Murphy (5) used flaps of fascia that contained as much fat as possible. Kirschner (6)

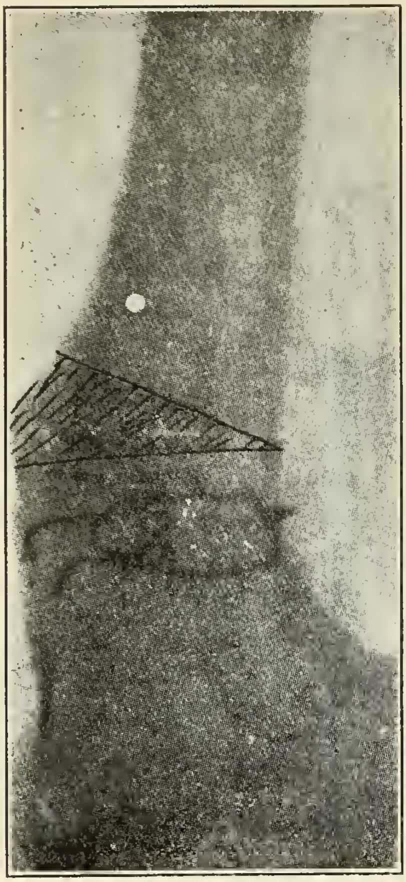

Figure 4. Shows severe injury of the knee with fracture of the femur, resulting in a bowing outward of the shaft five inches above the joint. Operation for the correction of the deformity was the removal of a wedge-shaped piece of bone as shown in the ink marks. This permitted a complete correction of the displacement. The wires shown were used by the surgeon at the time of the original injury.

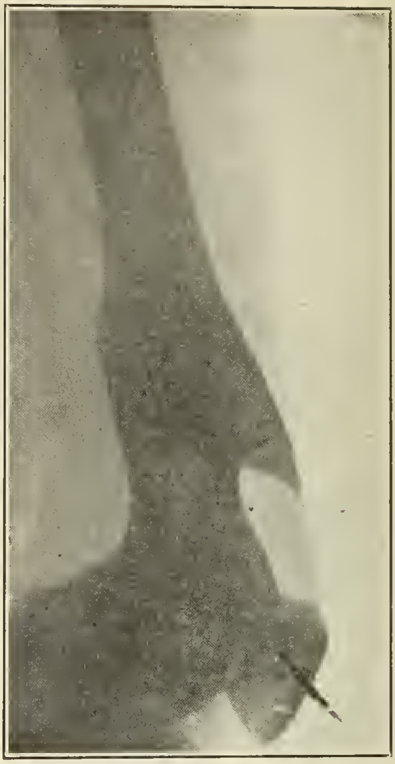

Figure 5. Before the arthroplastic operation. X-ray picture of the knee showing extensive deformity following fracture, involving the entire quadriceps muscle. Patella also adherent.

then demonstrated that fascia could be transplanted free and still retain its vitality, and many operators have employed free fascia transplants. W. S. Baer (7) has employed chromicized pig's bladder."

There appear distinctly before us two practical methods; first, that of J. B. Murphy, who uses lateral fascia-fat flaps in the knee and similar facia-fat flaps for the hip, elbow, shoulder, wrist and other joints; and, second, that of William S. Baer of Johns Hopkins, who has had very satisfactory results with the use of animal membrane. This membrane is made from pig's bladder in various thicknesses, chromatized in the same way that catgut is chromatized for sutures.

The details in the early steps of these two operations are very similar. The first step is to expose the joint, separate the bones and remove a sufficient amount of bone as to almost flail the joint. If the fascia-fat flap method of Murphy is to be used, it is secured from the fascia and fat immediately adjoining the joint operated on. It is highly important that the fascia and fat be dissected from the original position and brought to the new position intimately attached, since it is the fat that contains the blood vessels which have the nutrition to the transplanted flap, for without this protection the fascia would slough in a short time and would require removal.

In the second method of operation, where the animal membrane is used, the membrane, which has been properly prepared and placed in normal salt solution for five minutes before using, is secured to one bone throughout the entire surface by chromicized catgut sutures around the margins, the membrane being trimmed to fit the surface rather loosely. In both instances the joint is closed free from blood clot. Since this material is the basis for organization of new inflammatory plastic material, when there is no hemorrhage in the area of operation, the chances in favor of restoring motion are greatly enhanced.

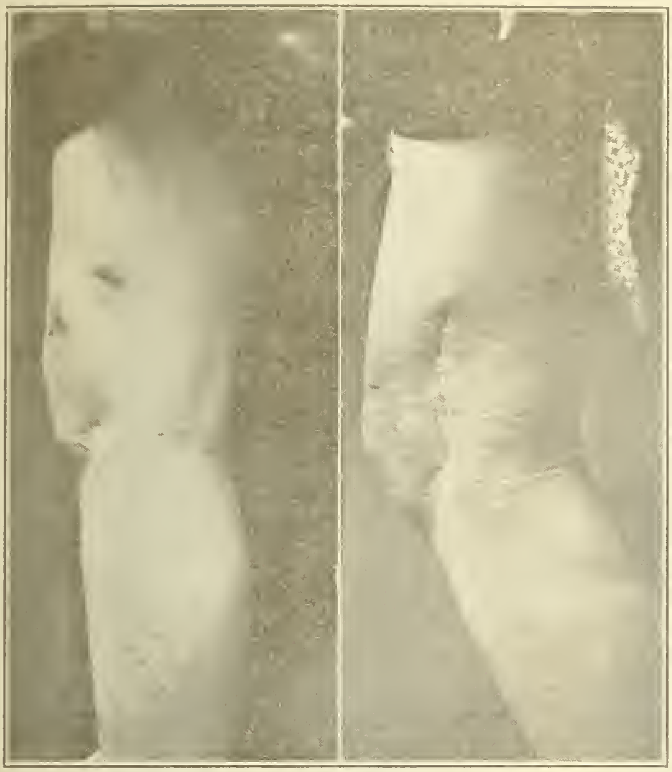

Figure 6. Showing the leg in complete extension and the best possible flexion.

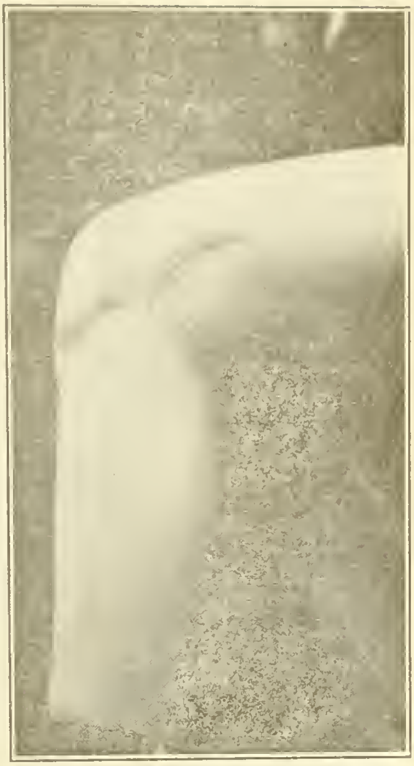

Figure 7. Shows range of motion ten weeks after the operation. This is rapidly increasing.

It is not my purpose to compare the merits of the two methods at this time, but to report some cases in which the Baer method has been used and exhibit the results.

Case 1. J. W. B., aged about thirty-five. Twelve years ago left patella was fractured. He was treated with posterior splint and adhesive plaster for six weeks, followed by the use of plaster-of-Paris cast for six weeks, after which a leather brace was worn for two years. Four years ago the same patella was refractured. He was again treated with posterior splint and adhesive plaster for six weeks, then plaster-of-Paris cast for another six weeks and a leather brace for two years. Two years ago the right knee cap was fractured. He was taken to hospital and the fragments were wired. A plaster cast was worn continuously for six months, except when removed for dressings. On February 14, 1914, he slipped on the ice and refractured both patellæ. He was treated in a suburban hospital with hot compresses and bottles for about three months, when he came into the service of the writer at Columbia Hospital.

Under general anesthetic an open incision was made into the joint of both knees. The middle fragment of the right knee was found to be intimately adherent to the condyles of the femur and separated for quite a distance. This fragment was removed and Baer's membrane interposed between the patella and the femur, allowing it to extend well up under and above the patella In the left knee the condition was found to be about the same. The large lower fragment was adherent to the femur, and the bones were entirely separated. In this instance the adhered portion of the patella was not removed, but after separating the bones, Baer's membrane was slipped in between them and sutured to the tibia, well down in between the condyles. In both incisions great care was taken to suture the membrane to the margin of the patella throughout. In performing this operation the median incision was used, rather than the circular or the lateral, in order to preserve the nutrition to the fragments which reached the bone from the sides, and if possible have this element toward the completion of repair in the most favorable condition possible.

The result obtained is shown in the next picture and the patient is herewith presented for your inspection.

Case 2. Miss M. S., aged about twenty-four, received a very severe fracture of the lower end of the femur. This was operated on by a competent surgeon and union occurred, but it was found after the wound had healed that there was no motion in the knee joint and that the femur was curved outward, as shown in Fig. 4. A wedge-shape piece of bone was removed, as will be observed in the cross lines in this picture. This restored the curvature but did not benefit the ankylosis. An x-ray picture was taken and a condition as shown in Fig. 5 was found. An effort had been made before this time

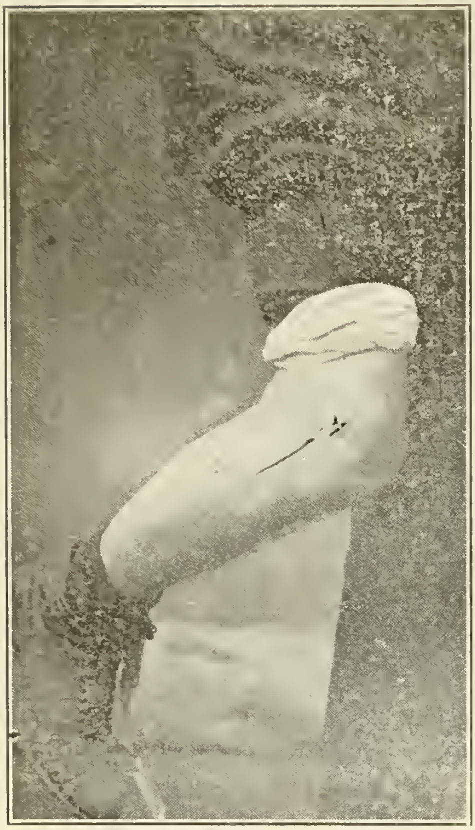

Figure 9. Shows the amount of flexion obtained.

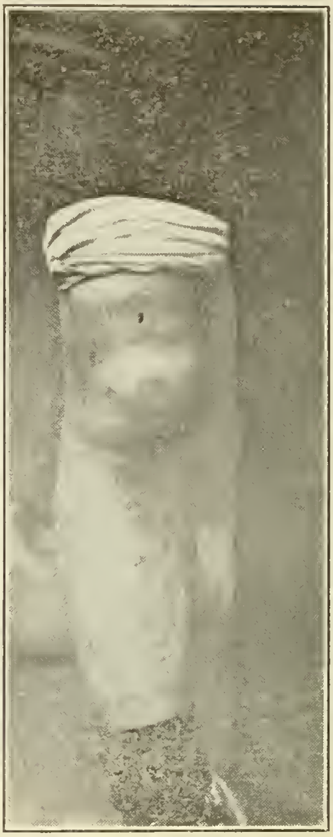

Figure 8. Shows the leg in the normal position (complete extension), showing the median incision that was used in Case 1.

to break up adhesions under an anesthetic, without success. It was decided that lack of motion was due to the intimate adhesions between the quadriceps extensor muscle and the femur at a point where the projection of bone is shown in the picture. This projection of bone was chiseled away and Baer's membrane sutured in place between the patella and quadriceps extensor femoris tendon and muscle so as to include the entire anterior surface of the femur, which had been chiseled away. Passive motion was used after the fifth day.

The result secured in this case is shown in the patient presented, as well as in the photographs of the knee before and after the operation.

In all joint injuries and especially in those cases where plastic operations have been performed, passive motion of some variety is essential. I have been using for several years a bicycle mounted on a trainer, and two of the cases reported have been using this method. This furnishes a repeated movement of the joint, appears to break up adhesions and increases the range of motion quite rapidly. I have been unable to secure the same benefit from any other method.

Case 3. G. B., aged twenty-two, in October, 1913, ruptured quadriceps extensor femoris a short distance above the patella, associated with extensive hemorrhage into the area of injury and the rupture was not recognized. January, 1914, writer first saw patient and aspirated what appeared to be an extensive serous effusion, but it also contained several ounces of blood clot, which was forced out through the opening left by the cannula. It was discovered that the quadriceps was ruptured and there was no power to extend the leg.

Operation was advised and after opening the area of injury by the median incision it was found that the ends of the quadriceps had grown to the anterior surface of the femur and were separated two inches. After carefully dissecting loose the ends of the muscle from the femur and freshening the ends, Baer's membrane was introduced underneath, extending from the middle of the patella upward for about four inches. The ends were brought together and sutured together with six heavy kangaroo tendon sutures. It was with great difficulty that the ends of the muscles were approximated and the leg was placed at an angle of forty-five degrees to the trunk for ten days, and after this time the patient was required to sit up at the same angle, maintaining the best approximation of the ends of the muscles possible. The result is shown in Fig. 8.

DISCUSSION.

Dr. Herbert B. Gibby, Wilkes-Barre: In discussing this paper I wish to report a case of complete ankylosis of the hip joint of Neisserian origin and of eleven years' duration. The ankylosis was complete, the entire joint having been destroyed, the *x*-ray showing no line of demarcation between the head of the femur and acetabulum. Dr. Murphy's method of flap interposition was employed, and notwithstanding an unfortunate infection, the result was excellent, the function of the joint having been almost completely restored; and after sixteen months, improvement is still progressing. The method of interposition of chromatized pig's bladder has the advantage over the flap method in that there is less hemorrhage and therefore less danger of infection.

Dr. McCurdy, closing: Baer's membrane is more easily adjusted than the fascia flaps. There is less hemorrhage in this operation than in that devised by Murphy, which means less blood clot within and about the area of operation, with a corresponding blood clot organization and permanent plastic adhesions, and on the whole, better end results, all things being equal.

In Case 1, with four distinct fractures of the patella, covering a period of twelve years, the patient was wearing cumbersome braces, and was practically disabled from performing his usual occupation as street-car motorman. I claim that an operation which will restore stability and motion in such joints is one that is to be accepted as entirely satisfactory. Patient has now returned to his former occupation as motorman.

In Case 2, the patient sustained the original injury three years ago and was operated on for the restoration of motion, July 7, 1914, or ten weeks before this report. She now has a range of motion almost to a right angle and this is gradually improving, and there is no reason why we should not hope for better than a right angle motion. She is also restored to her former employment and will be able to compete with other people on an equal footing, due entirely to the operation and to the successful method of using Baer's membrane.

THE EXTRAPERITONEAL OPERATION IN STRICTURES OF THE SIGMOID COLON.

BY WILLIAM M. BEACH, M.D.,
Pittsburgh.

(Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 22, 1914.)

To remove growths of the pelvic colon by the extraperitoneal method, and thereby reduce the high mortality attendant upon immediate anastomosis, is the plea of the author.

Accessible records show that immediate end-to-end or lateral unions are followed by more than fifty per cent. mortality; hence it is certainly desirable that some procedure, even though not so brilliant in technic, be invoked that will enable the surgeon to extirpate the disease successfully, with a much reduced mortality.

The lumen of the bowel may be so much reduced that it becomes impossible to clear the upper segments of feces for preparation. The operator, after cutting across the bowel above the tumor, is obliged frequently to press out the contents, but may still be defeated in his result by overlooking an accumulation in the transverse colon which, coming down, is unable to pass through the Murphy button, causing obstruction, tearing stitches, followed by peritonitis and death. It is better therefore, when impossible to clear the upper segments of fecal formations, to make a temporary colostomy and excise the stricture by the extraäbdominal method, and thus avoid the complications that so often arise following immediate union.

The principle may be applied to the removal of any neoplasm of the sigmoid flexure causing stricture, even redundant sigmoid or diverticulitis conditions that establish intestinal stasis. Tuttle, advocating this technic, reported four cases (three of carcinoma and one luetic stricture) without a fatality, as against a high mortality by the direct method. My experience is limited to two cases, both passing through an uneventful postoperative convalescence; one was a case of luetic stricture, the other a case of adenocarcinoma. The patient in the first case died one year later from pneumonia. In the second, the patient is at present working for the Westinghouse Electric Company, but still carrying an artificial vent in the left side, with perhaps one half of the fecal current passing *per rectum.* In this case I did not attempt the third step, for obvious reasons.

Of passing interest, we shall briefly consider the diagnosis of stricture in the sigmoid, or better the pelvic colon, so-called by the French. It depends upon a variety of symptoms, the most constant of which is constipation with colicky pains. These pains are due to distention above the stricture and are apt to precede rather than accompany defecation. Various points reflect the colicky pains thus produced,

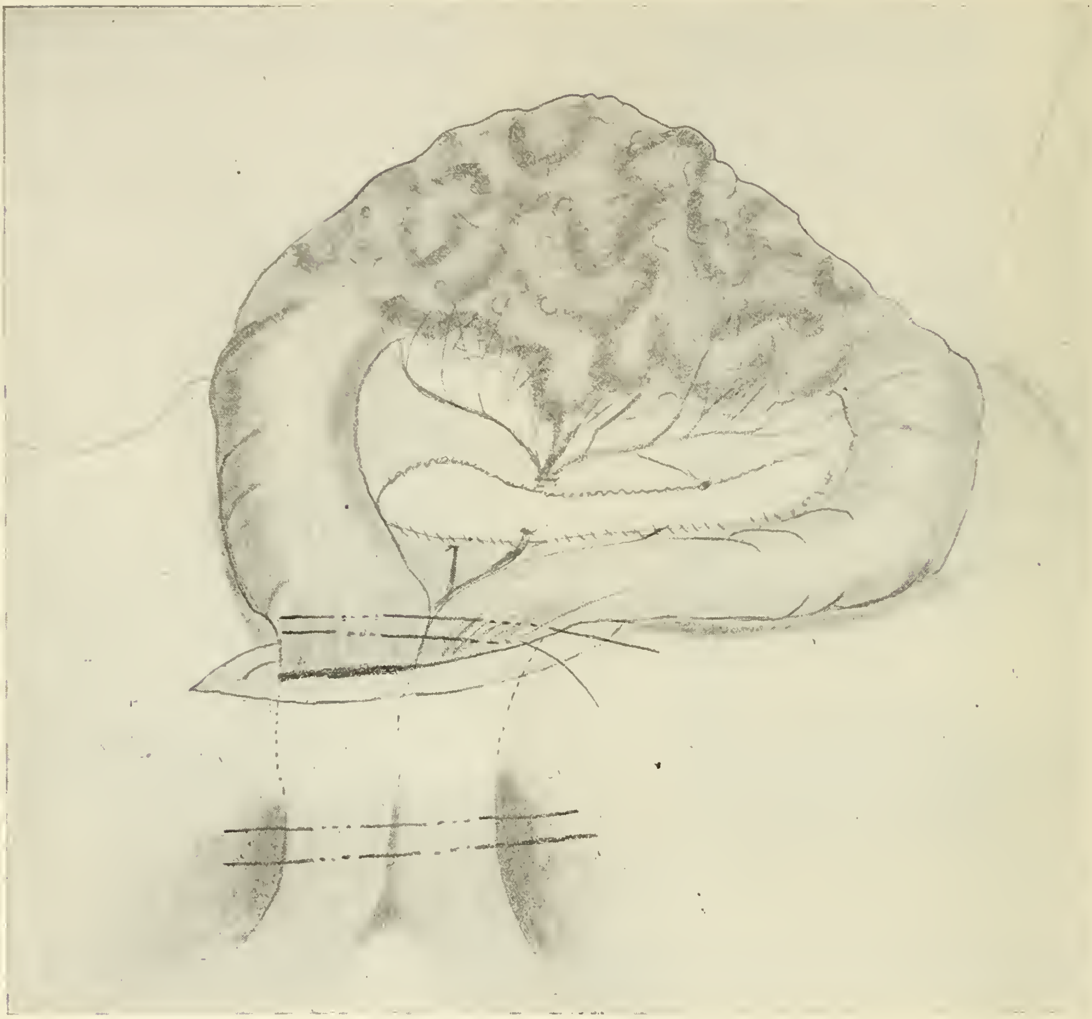

Figure 1. First step. (Tuttle.)

as the splenic and hepatic flexures and the left sacral region. Cystic irritation is often in evidence, as well as prostatic discomfort in men, while in women the ovarian clefts are sensitive to the invasion. How frequently is the general practitioner confronted with patients having distress in the upper abdominal spaces, pain under the ribs, which can be relieved by unloading a sigmoid obstructed from any cause. Owing to irritation immediately above the stricture or the neoplasm itself, the constipation may be of the type of incontinence of retention, due to a weakened sphincter with hemorrhoids, or there may be alternate mucous diarrhea and constipation. If the discharges are blood-stained, as is frequent, we become suspicious of a malignant neoplasm; and if such growth be in the lower loop of the sigmoid, it can readily be verified by the sigmoidoscope, as I was able to do in one of my cases. The diagnostician may be able on deep palpation to recognize a tumor in the left hypogastrium, which, associated with the symptoms just stated, will go a long way in clearing up the case. The application of the operation proposed assumes the tumor to be located just above the recto-sigmoid junction and to be movable, but which may involve segments above this point.

An incision three or four inches long is made at the outer margin of the left rectus muscle, a convenient point for a permanent colostomy if we find the case inoperable, besides a large enough opening to explore thoroughly the pelvis and for the delivery of the tumor. The patient is placed in the Trendelenburg position, the small intestines lifted out of the pelvis and drydocked above as high as possible. The sigmoid is seized and delivered with the tumor.

Incise the peritoneum on both sides of the mesosigmoid well above and below the segment to be removed and rather close to the gut. The peritoneum is stripped back to the crest of the ilium. The mesenteric contents are thus exposed, showing the blood supply, glands and fat, and the loosening of the peritoneal band will permit the gut to be drawn out upon the abdominal wall. All fat and glands about the blood vessels supplying the tumor are gently expressed toward the gut. The artery and veins can then be clearly seen and the main vessels supplying the diseased portion are cut between two ligatures. This will permit the gut to be lifted out still farther. The stumps are buried beneath a line of suture uniting the two planes of the mesosigmoid, thus closing the peritoneum posteriorly (Figure 1). The two legs of the loop are brought together by a suture along the border of the mesentery, as low down the peritoneal cavity as possible, then they are rotated on themselves outwardly and another suture uniting the longitudinal bands on the same planes as the inner line. This brings the flat surfaces together, the portion to be clamped off subsequently without interfering with important blood supply.

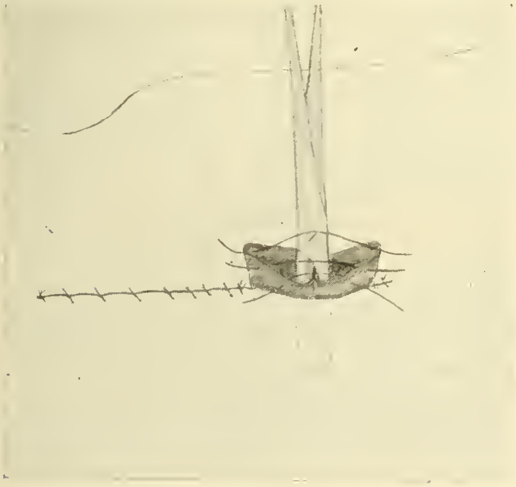

Figure 2. Second step. (Tuttle.)

Figure 3. Second step. (Tuttle.)

The peritoneum is now stitched around the legs with the tumor lying on the abdominal wall. The gut is anchored to the skin and the rest of the wound closed in the ordinary way. It is then covered with gutta percha tissue and allowed to remain for eighteen to twenty-four hours. If much distention occurs, the upper leg may be punctured; and if gangrene is imminent, the second step may be executed even sooner than eighteen hours.

The second step consists of the excising of the loop by a V-shape, as shown in Figures 2 and 3. It will be observed that no hemorrhage or pain will accompany this section, nor will there be peritoneal infection, for the reason that the blood supply is cut off and all peritoneal surfaces closed.

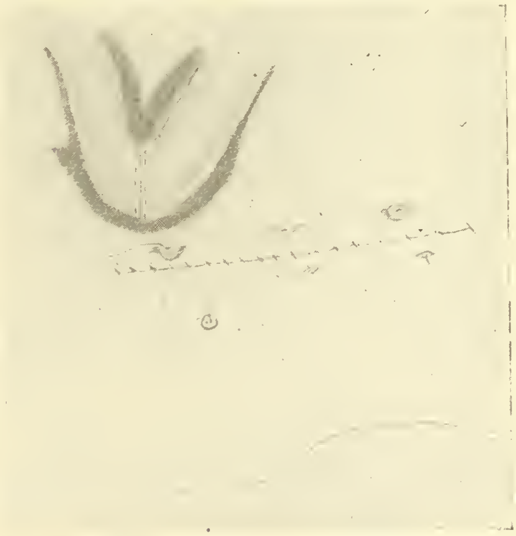

Figure 4. Third step. (Tuttle.)

The wound remains thus for one week, at the expiration of which time a Pryor's hysterectomy clamp is applied well down the legs of the approximated gut, which is left there to cut its way through the septum which requires four or five days. A No. 7 Wales bougie is then introduced per rectum through the opened septum and allowed to remain two hours, which should be repeated three times daily until the part has healed. The effect of the elastic tube will be to make pressure on the posterior commissure of the slit septum and cause the segments to retract, thus training the bowel contents to find a way through the normal channel.

If there is any difficulty to introduce the tube per rectum, a tube of the same caliber, five or six inches long, is just as efficacious, introduced at the site of the colostomy. Having tied a tape around the middle of the tube, insert one end in the lower leg then the opposite pole in the upper leg, the same pressure being made as when introduced per rectum. The tape hanging outside allows the attendant to remove the tube easily.

The period required in the second step is determined by the healing and by the extent of involvement caused by the malignant neoplasm. A clean case will require at least thirty days before the third step of reëstablishing the continuity of the colon. If there is fear of recurrence, the ostium should remain for a year or two, at least.

In the third step, we dissect the edges of the artificial anus away from the skin and the fascia down to the peritoneum and approximate the walls of the gut with two lines of suture, the first of silk to be through and through, the second line of fine chromic cat gut to be Lembert (Figure 4). Now dissect the peritoneum the entire circuit of the wound for about one half an inch, trimming away any scar tissue. These tissue layers are brought together with sutures anchored on flat buttons which will prevent tearing out on account of pressure which may aid in overcoming a gaping wound by giving the button a half turn. Finally a continuous suture closing the integument is placed.

We do not claim that these wounds will always heal by first intention; but should a fistula occur, it is of little consequence for they usually close spontaneously.

The patient may fret on account of the artificial anus; but when he is convinced of the safety of the procedure over an immediate closure, he will become reconciled.

J. P., aged forty-two, laborer, was referred to me by Dr. L. in April, 1914. Patient complained of obstinate constipation for two years, during the last six months had passed bloody stools frequently, and had so much cystic irritation that treatment was given in that direction for one year. Palpation revealed a movable mass to the left of the middle line in the hypogastrium and extending into the left ilium. Sigmoidoscopy verified a large scirrhous ulcer in the lower loop of the pelvic colon. The diagnosis was malignant stricture of the colon, and an exploratory operation advised. This was done April 11, 1914, in the Presbyterian Hospital, when we found a tumor involving the entire circuit of the pelvic colon four inches above the recto-sigmoid junction and adherent to the posterior wall of the bladder, upon separating the tumor from the bladder, we ruptured the bladder. We trimmed considerable suspicious tissue from the cystic wall, and sutured. The tumor, which was reported by the pathologist to be an adenocarcinoma, was disposed of in the manner described above. Owing to the malignancy, we have postponed the third step indefinitely. The patient has regular stools daily, partly *a via natura.* His bladder symptoms have subsided, his appetite is normal, weight increased, and he is able to follow his occupation with a reasonable degree of comfort.

The case of syphilitic stricture referred to was an Italian woman, whose wound was successfully closed in sixty days.

DISCUSSION.

Dr. George Erety Shoemaker, Philadelphia: Sir Bland Sutton in the Address on Surgery before the British Medical Association, 1914, remarked that, in spite of most admirable work and surgical enterprise, cancer of the large intestine is as opprobrious to the surgeon as hysterectomy for cancer of the neck of the uterus to the gynecologist, and for the same reason, sepsis. He quotes, in the *British Medical Journal* of August 1, 1914, page 237, the statistics of the London Hospital for 1901-11 as ninety-five resections of cancerous portions of the large bowel, with a death rate of forty-eight per cent.

This significant statement by one of the leaders of the surgical profession represents unfortunately the general truth, although individual operators have a much better personal record.

In accounting for this mortality he lays emphasis on the invasion by bacteria of carcinomatous areas of the bowel. Infection of the peritoneum follows from that source, through contact with instruments and the hands of the surgeon when resection is made. It is to avoid such contamination that operations in two or three stages, of a type such as that described by Dr. Beach, have been devised. The outer free surface of such a growth is not covered by bacteria, hence the suture of the bowel to the parietes does not involve contamination in the preliminary operation, by bacteria from the mucous surface or from deep portions of the growth.

There is however another very large factor in the risk of any operation upon cancer of the colon, namely the depressing toxemia which results from chronic obstruction. The larger the area, the greater the rigidity of the wall involved, the greater the constriction of the lumen, the greater the stasis of intestinal contents and the fermentation with resulting toxemia. Such patients always have low resisting power. If to chronic obstruction always present there be added at the time any acute symptoms it is always a good rule to avoid a complete anastomosis operation at the first sitting, no matter how great the temptation. But assuming whatever opprobrium there may be associated with a so-called second operation among the friends of the patient, and contenting oneself with suture and drainage, there is no doubt that a large reduction in the immediate death rate can be secured.

In the case of a low down ·or of an immovable growth an ordinary colostomy may be used to get rid of the toxemia and resection will then follow more safely, but here the advantage of the aseptic second stage is lost.

Dr. Beach is to be congratulated on the success of his operations.

Dr. Ernest Laplace, Philadelphia: An additional factor to give worth to the method advocated by Dr. Beach is that in chronic cancer cases, even a perfect anastomosis may fail in perfect healing on account of the cachectic condition of the patient. Hence the chances of success are increased by the multiple stage operation.

BLOOD PRESSURE IN PREGNANCY.

BY JOHN COOKE HIRST, M.D.,
Associate in Obstetrics, University of Pennsylvania, Philadelphia.

(Read by title before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

Since Mangiagalli first called attention to the importance of a rising blood pressure in pregnancy as a sign of the toxemia of the latter half of pregnancy, evidence as to its value has accumulated until now the taking of blood pressure is universal, and no more to be neglected than are the routine measurements or urine examinations of a pregnant woman.

A high blood pressure is not an invariable companion to toxemia, however. Cases are seen, undoubtedly toxic, even in actual eclampsia, with a blood pressure of 130 or lower. But these cases are rare, and so rare that a high blood pressure can be said to be far the most valuable early sign of impending toxemia. Even in those cases where the pressure is low, it is still important in prognosis as they are almost always those of the hepatic type, far more serious clinically than the nephritic type, and with a much higher mortality. Clinically the lower the blood pressure, in a woman with actual eclampsia, the more unfavorable the prognosis.

Apparatus. The two types of apparatus most used are the mercury column, and the aneroid dial. Of the two, I prefer the former. The latter's chief claim is its portability, but I have found them not as accurate as the mercury column and no more convenient to use.

Methods of Taking. Of the four methods available, the auscultatory one is, I believe, the most reliable. The shutting off of the pulse and noting its return by palpation at the wrist is convenient but gives readings a good deal lower than the method of auscultation. The oscillation of the mercury column will give readings about the same as the auscultation method, or possibly a little lower. It is subject to misreading due to muscular twitching, however, and objectionable from this cause. The complicated instrument, combining a sphygmograph with the sphygmomanometer, gives very accurate readings; also a permanent form of record in the tracing of the pulse wave, but it is too expensive, complicated and nonportable for general use. It is interesting to note, however, that the readings by this instrument will average thirty points higher than by any of the other methods; a pressure of 150 corresponding to one of 120 by the others.

Whatever method be chosen, it should not be varied, but the takings in the same patient should be by the same method and instruments. Exact accuracy is not of as much moment as the comparative record, to show a tendency to rise and fall. It is convenient to keep a card catalogue of obstetric patients; on these cards the pressure and date taken are entered, so the entire history throughout pregnancy is available at a glance.

The Normal Pressure and Its Variations. In a woman under thirty, normally pregnant, the average pressure will be about 118 throughout the first eight months of pregnancy. In the last month, it rises slightly so that 124 is a fair average. Following the subsidence of the uterus, shortly before term, a slight fall is often noted, but this is not invariable. In a patient from thirty to forty years a slightly higher pressure, about 126 to

128, is the average, and after forty a still further raise is noted. The number of patients past forty years of age I have observed and whose blood pressure I have taken is somewhat limited, but the average pressure in these has been 132.

I have spoken only of the systolic pressure. The diastolic can not be forgotten. It is of importance when there is more than the average divergence of thirty to thirty-five points between the two. A difference of fifty points or more should be looked upon with suspicion, and such patients are greatly benefited by small doses of digitalis or strophanthus, until the normal relation between the systolic and diastolic pressure is established. A heart muscle showing such wide divergence of the two pressures is not well equipped to stand the strain of the expulsive pains of the second stage of labor.

It is not common to see a high blood pressure in the early months of pregnancy, but when it does occur it is almost invariably a sign of preëxisting nephritis and not a true toxemia. The highest blood pressure I have seen in the early months is 220; the patient had a diastolic pressure of 190, the highest I have ever seen, and the development of eye symptoms necessitated the premature termination of her pregnancy. The average blood pressure of a woman in actual eclampsia is 190 to 200. This however is often exceeded, and I do not know what the upper limit is. In one patient, the mercury ran out of the top of the glass tube, an estimated height of 420 mm., and the pulse at the wrist still was beating forcibly. In another the rubber arm cuff exploded at 400 without shutting off the pulse. Both these patients recovered, so an extremely high pressure, while of course dangerous, does not seem necessarily fatal.

Methods of Reduction of Blood Pressure. These vary somewhat with the date of pregnancy and the condition of the patient. With a woman in eclampsia, stuporous, and with frequent convulsions, and a pressure of 190 or over, venesection is the quickest means. At least sixteen ounces and often, better, twenty to twenty-four should be removed. In the preeclamptic stage venesection is a good means of dealing with a temporary emergency, but here the loss is quickly made up, and the pressure is soon back to its original height. If the patient is past the eighth month, the rupture of the membranes is usually accompanied by a rapid fall of fifty to ninety points, but this is temporary only; and of course the rupture of the membranes will usually induce labor; so if this result is not desired, the method had better be avoided.

Nitroglycerin in one fiftieth grain doses hypodermatically is of questionable value. A much better drug is the fluid extract of veratrum viride, given hypodermatically. Large doses are required, fifteen minims as an initial dose, and repeated doses of five minims until the pressure is reduced to 140 or less. This is, except in actual eclampsia, a method to be handled cautiously, and its use is better restricted to the actual eclamptic seizures, rather than a routine method in every case.

The main reliance must be put upon milk diet, and purgation and sweating. Purgation should be by large doses of magnesium sulphate, or castor oil, two ounces, with croton oil, four minims (given through a stomach tube to avoid vomiting). This latter dose is best in the eclamptic patient; salts are better for ordinary use. Sweating is carried out by hot, wet packs, which are not of much use, or by steam baths in a cabinet or tent built over the patient as she lies between blankets in bed. This is much the best method and, in a case requiring active treatment, sweats for thirty minutes are given every four hours. For less urgent cases the frequency is of course reduced. Sweating by pilocarpin is dangerous.

The most valuable means of reducing the blood pressure at any stage is, therefore, active purgation, active sweating, aided often by venesection and, in proper cases, the rupture of the membranes.

Induction of Premature Labor. It is difficult dogmatically to lay down a rule covering the induction of labor in these cases. As nearly as that can be done, it may be said that a blood pressure of 125 or under is normal; one of 125 to 150 should be looked upon with growing suspicion and carefully watched; and one of 150 or over, especially if accompanied by other signs of toxemia will require energetic treatment and often the termination of pregnancy.

Whatever may be laid down as the limit

of blood pressure before labor is induced, one symptom invariably indicates interference. If a woman with high blood pressure, albuminuria and other signs of toxemia, develops persistent headache and, above all, failing vision, her pregnancy must be terminated at once.

After labor, there is a pronounced fall of pressure, for some hours; then it rises again and is usually the last of the signs of toxemia to disappear, persisting often for two or three weeks and, where there is a coincident nephritis, over several months.

I have not found any objection to the use of ergot, either by mouth or hypodermatically, in cases of toxemia with high blood pressure. Pituitrin, however, with its tendency to produce temporary and often violent rises in blood pressure, should be avoided, although the rise of blood pressure is by no means invariable.

THE SURGICAL TREATMENT OF GASTRIC ULCER WITH ESPECIAL REFERENCE TO THE CHOICE OF OPERATION.

BY CHARLES H. FRAZIER, M.D.,
Surgeon to the University Hospital, Philadelphia.

(Read before the Philadelphia County Medical Society, December 23, 1914.)

With the application of modern methods in diagnosis, the incidence of gastric and duodenal ulcer is much greater in hospital practice than it was a few years ago. The frequency of gastric ulcer may be gauged somewhat by that of gastric cancer. Next to the uterus and breast, the stomach is the most common seat for cancer, and the relation between ulcer and cancer is now so well established that Wilson and McDowell[1] in their analysis of 445 cases say, "It seems probable from a careful study of the clinical and pathological evidence of the series of cases that gastric cancer rarely develops except at the site of a previous ulcerative lesion of the mucosa."

As the basis for this discussion, I have selected from my entire series of gastric ulcers, the last sixteen consecutive cases in which partial gastrectomy was performed, in thirteen instances for chronic ulcer alone, and in three for ulcer with carcinoma implanted. Of this number, only one patient, the fourth of the series, died. This series, while not large, is thoroughly representative, as it includes ulcers of various sizes and of varying duration, in people of both sexes, some young, some old.

It would take me too far afield, nor is it within my province to enter into an academic discussion of the methods of diagnosing ulcer. But as the surgeon often is confronted with the problem of diagnosis, I have some settled convictions which may here be introduced. There is often unnecessary delay in attempting a differential diagnosis between callous ulcer and carcinoma, and it is of no great clinical importance, as the treatment of both should be surgical and if, as is often the case, the differential diagnosis can not be made even after the abdomen is opened and the lesion exposed, how utterly impossible it must be to distinguish between the two beforehand.

Of all the methods at our disposal in the diagnosis of ulcer, I have come to place reliance chiefly upon the history and upon the roentgenogram. The Roentgen method has been said to be the most extensive, and at the same time the most accurate method of diagnosing gastrointestinal lesions. The refinements of technic are such that the diagnosis of ulcer of the stomach and duodenum is now made in from eighty-five to ninety-five per cent. of cases. The roentgenogram in the hands of the experienced operator has supplanted the exploratory operation, so that we now seldom fail to find a lesion where the case has been through the hands of the roentgenologist. As Schnieden has put it, a scientific diagnostician will not diagnose gastric lesions on roentgen-ray examinations alone, nor should he diagnose important gastric lesions without using the roentgen ray.

Secondly, the history is seldom misleading; though there be cases of chronic appendicitis or gall bladder lesions in which there is an extraordinary mimicry of the picture of ulcer, cases of gastric neurosis without organic lesion rarely filter through a medico-surgical staff to the operating table. Use should be made of all other diagnostic methods, such as the analysis of the gastric contents, etc., and the decision finally reached with due regard to all methods in proportion to their importance. Failure to recognize the existence of ulcer implies, in many instances, either errors of omission or of commission, and the surgeon is justified in entering protest when patients are referred to him, who, as in many of my cases, have been indifferently treated for years for indigestion or dyspepsia, when a painstaking inquiry into the history should at least arouse suspicion as to the existence of ulcer and demand further investigation. In looking over my records, I find cases in which the history of ulcer extends over a period of many years, occasionally even with an unrecognized perforation from which the patient has been fortunate enough to recover.

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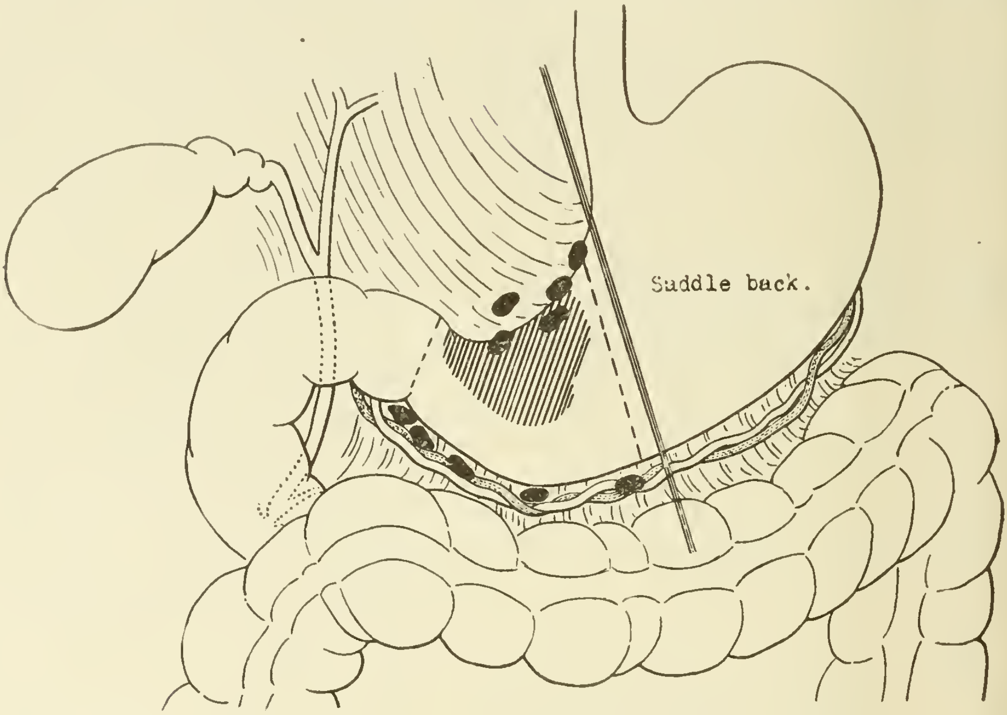
[1] *Am. Jour. of Med. Sci.*, Dec., 1914.

Leaving out of consideration hemorrhage and perforation which are but complications of ulcer and the acute ulcer, both of which the surgeon has nothing to do, in the chronic ulcer of the stomach and duodenum, are the patients' interests best conserved by medical or surgical therapy? For my part, I would ardently advocate surgical measures because the experience of my patients more than justifies



B. F. F. Age 55, male File No. 36 Service of - Dr. Charles H. Frazier.

Final Diagnosis Chronic gastric ulcer.

Duration of illness Two years.

treated for chronic gastritis

Principal symptoms

Gaseous eructations
vomiting
soreness
pain
jaundice (occasional)

Operation December 2, 1910

Partial gastrectomy
Posterior gastro- jejunostomy

Present condition Four years later.

Gain in weight - 45 lbs.
Indigestion a little
Gas on stomach a little
Pain in stomach none
Vomiting none
discomfort none
hemorrhage none.

End result Complete recovery.

my confidence in surgical treatment. But there may be many here who take a more conservative view and who could be persuaded only by substantial proof.

Let me submit the end results of a series of 120 cases of gastric ulcer treated by medical measures.[2] At the time of their discharge from the hospital, eighty-six per cent. of the patients were completely cured or very much improved, sixteen, or thirteen per cent., unimproved. What happened to the patients of this series of 120 cases after they left the hospital? Thirty per cent. had died, mostly within two years, five per cent. were unimproved, thirty-five per cent. were improved (*i. e.*, they either had to live on a very restricted diet or were unable to resume their occupations without

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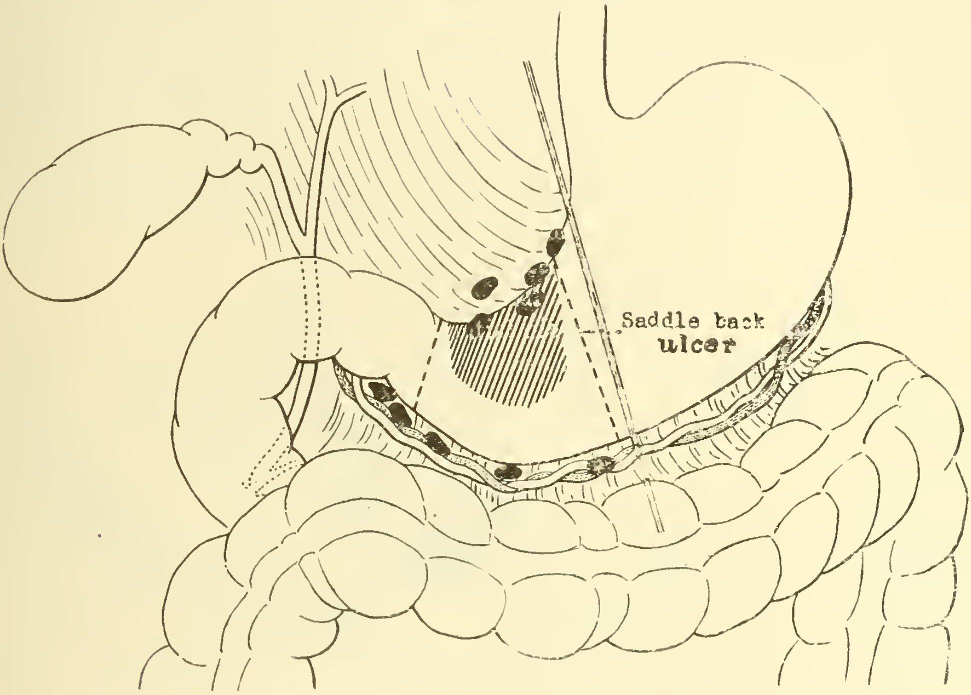
[2] *Parilä Arch. f. Vordanungs. Krank.*, 1912, Vol. XVIII.



R. W. Age 47, male. File No. 11717 Service of Dr. Charles H. Frazier

Final Diagnosis Chronic gastric ulcer. Operation June 24, 1912.

Duration of illness ten years
Egg and milk diet for six years.

Partial gastrectomy
Posterior gastro-jejunostomy

Principal symptoms

Pain
Soreness
Vomiting
Total acidity - 35
Occult blood - negative
Loss of weight

Last report 2½ years later

Indigestion - None
Gas on stomach "
Pain is stomach "
Vomiting "
Discomfort "
Hemorrhage "

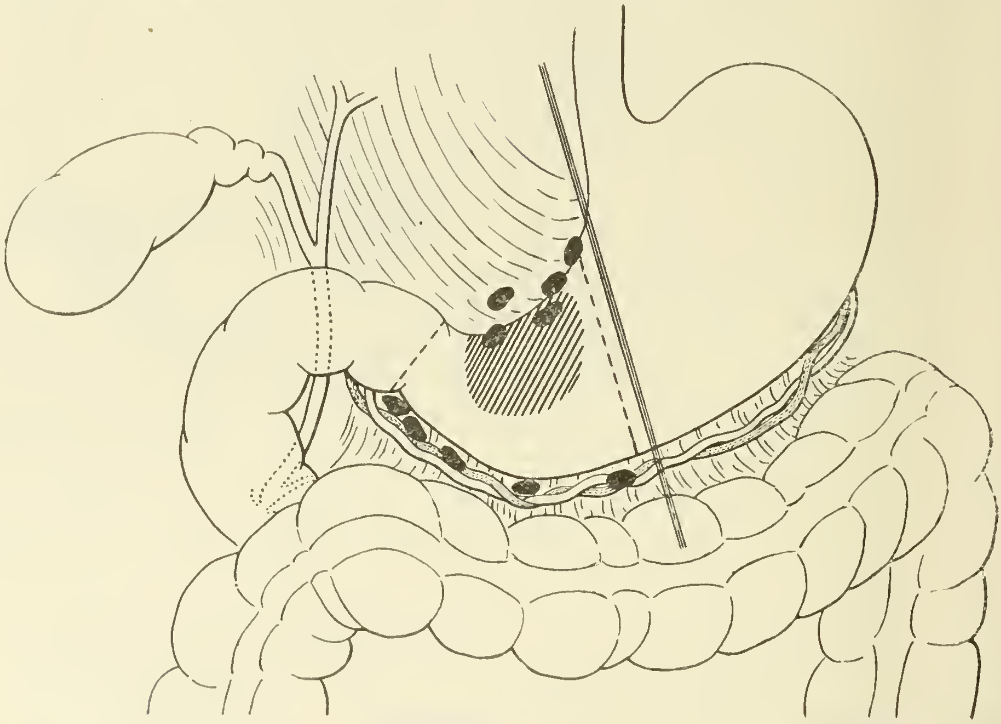
"Condition could not be improved. Am in perfect health. Never had trouble of any kind since operation"

End Result Complete recovery

return of symptoms), and thirty per cent. were entirely well. Whatever extenuating circumstances there may be, certainly a mortality of thirty per cent., whatever the state of being of those who survived, does not inspire confidence.

Of the results of surgical treatment of gastric and duodenal ulcer the mortality for simple gastrojejunostomy is between two and three per cent., the percentage of cures or great improvement may be placed conservatively at eighty per cent., although some claim a higher percentage. The comparison of the end results treated by medical and surgical measures results in but one conclusion.

Perhaps there may be some yet who will not be convinced by such sweeping statements and believe in a more critical analysis of the situation and greater discrimination in the selection of cases. This attitude I can sympathize with, and to meet such criticism, I have laid down certain rules of practice on the basis of which my cases are selected for operation. I accept for operation, first, cases of recurrent hemorrhage, which despite medical treatment become progressively more anemic, where un-



J. D. Age 50, male. File No. 10672 Service of - Dr. Charles H. Frazier

Final diagnosis Chronic gastric ulcer

Operation February 5, 1912.

Partial gastrectomy
Posterior gastro-jejunostomy
Right herniorrhaphy

Principal symptoms

Pain
Vomiting
Hyper acidity
Occult blood

Post-operative complications

Pneumonia

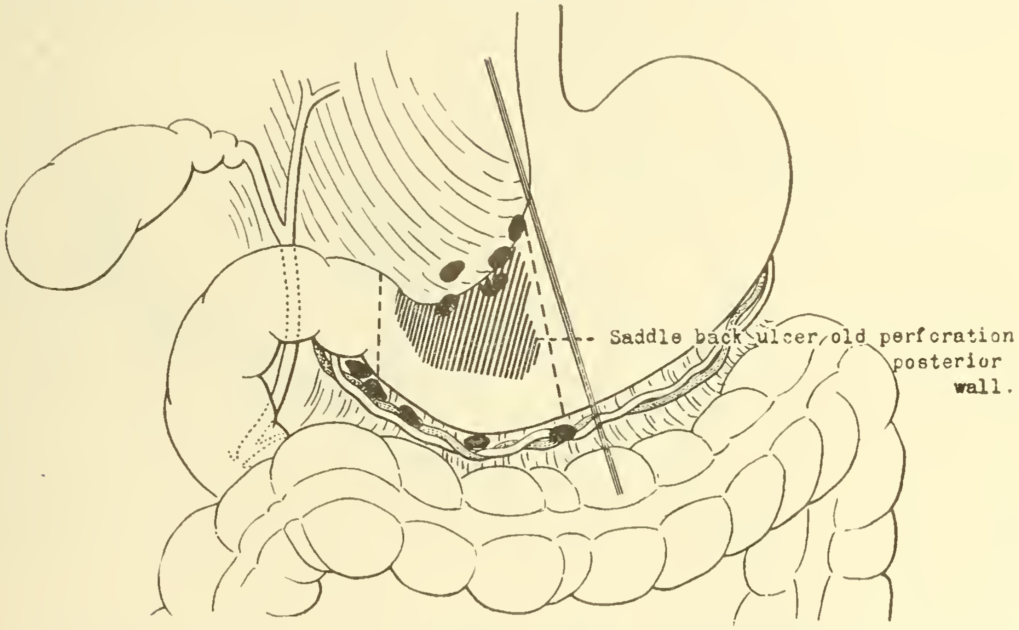
Final report When last seen, within a year had no recurrence of symptoms.

End result Recovery (?)

less the hemorrhage is arrested the case will become inoperable. These cases should be transferred at the time of operation, if the hemoglobin is below thirty per cent.

I accept for operation, secondly, cases with positive obstructive symptoms, when by the various tests, with or without vomiting there is evidence of retention. More or less persistent vomiting is, of course, an undisputed indication. Thirdly, I include among the favorable cases, those who from pain or from lack of nourishment have become physically disabled and are unable to pursue their several occupations. Fourthly, I do not hesitate to recommend operation where there is the possibility of chronic appendicitis or a gall-bladder lesion mimicking ulcer. Fifthly, the nearer to middle life the patient, the more urgently do I impress operation because of the cancer incidence. Finally, a distinction is made between the well to do and the working class, between those who can or will follow a prescribed diet, and those who can not or will not.

Surgical intervention in the earlier days, in the vast majority of instances, consisted solely and exclusively of gastrojejunostomy, and because of this wholesale and undifferentiated treatment, because the cases were not selected, there is a far from encouraging picture of surgical results in the minds of many practitioners. There were then many more cases of relapses than there are to-day, when gastro-



J. S. C. Age 53. Male. File No. 26726

Final Diagnosis Chronic gastric ulcer.

Duration - ten years

Principal Symptoms

Indigestion
Eructation
Soreness
Pain
Hemorrhage
Loss of weight

Service of Dr. Charles H. Frazier

Operation January 1914.

Partial gastrectomy
Posterior gastro-jejunostomy

Last report - six months.

Gain in weight - 16 lbs.

Indigestion) Only when he
Gas on stomach) over-eats.
Pain in stomach)

Vomiting - three times since operation.
Hemorrhages - none.

End Result - Partial recovery.

jejunostomy has been supplemented by either excision or occlusion of the pylorus or both by partial gastrectomy. In the absence of pyloric obstruction, the artificial stoma after simple gastrojejunostomy is of drainage value only as long as the pylorospasm persists.

The researches of Cannon and studies with the bismuth radiograph have long since established the fact that with a patulous pylorus, the food passes by the drainage opening to resume its natural route, and if the pylorospasm subsides, as it often does before the ulcer is healed, there is immediate relapse. Naturally then, did Mayo Robson[3] write, two years ago, "I think the time has come for a reconsideration of the operation of gastroenterostomy, of the class of cases in which it is justifiable to perform it, and of whether or not one can suggest a better way, in some cases, of giving the stomach and duodenum absolute rest until ulcers or other disease may have healed and been remedied." Reconsideration has been given, and as a result, gastrojejunostomy is seldom practiced without occlusion or bisection of the pylorus. I venture to prophesy that the statistics for the past two years and from now on, will show an increas-

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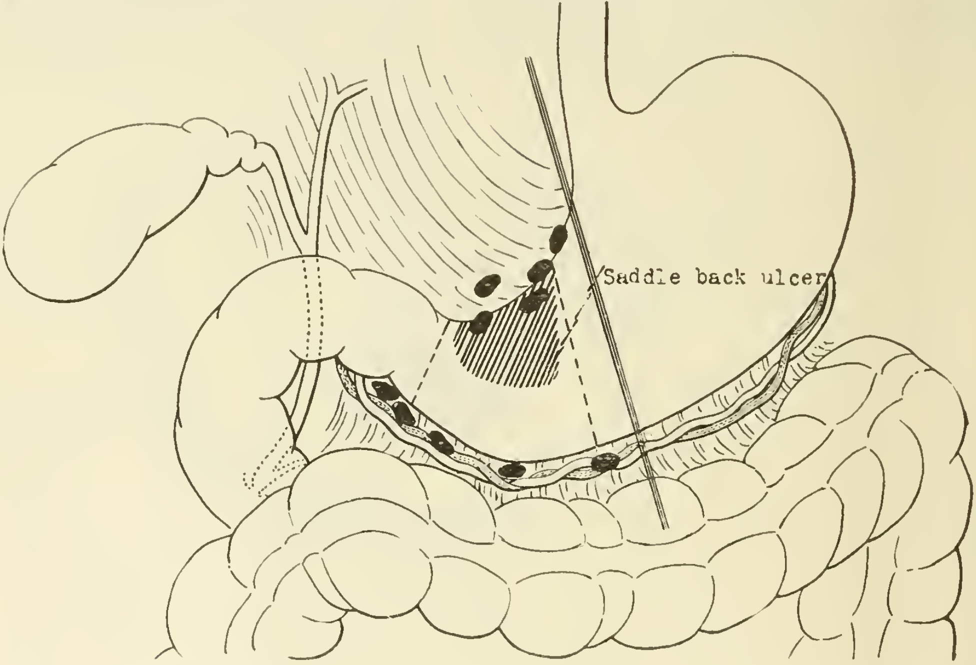
[3] *Brit. Med. Jour.*, Jan. 6, 1912.



J. D. Age 30, male. File No. 4308

Final Diagnosis Chronic gastric ulcer

Duration of Illness Five years

Principal Symptoms

Indigestion
Belching
Vomiting
Constipation
Hemorrhage
Loss of weight.

Service of - Dr. Charles H. Frazier

Operation December 24, 1912

Partial gastrectomy
Posterior gastro-jejunostomy

Last report Two years later

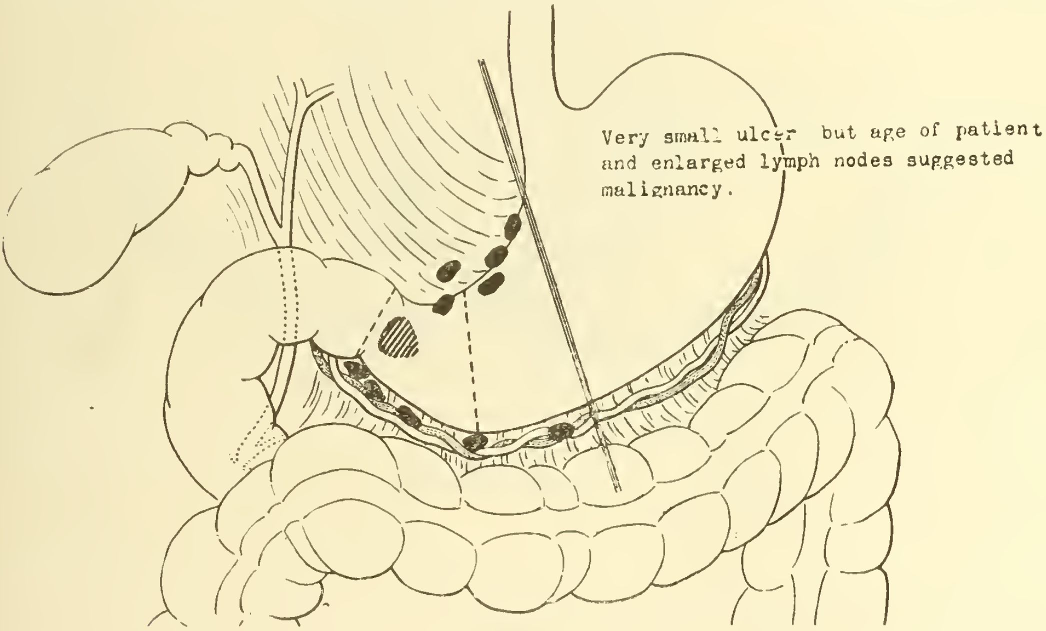
Gain in weight - 14 pounds.

Indigestion)
Gas on stomach) "Not had
Pain in stomach)any of these
Vomiting after meals)troubles
Discomfort)since the
Hemorrhage)operation"

End Result Complete recovery.

ingly high percentage of permanent recoveries because, as Mayo Robson suggested, a better way has been found of giving the stomach and duodenum absolute rest until the ulcer has healed, or what is better still, the ulcer has, in many instances, been excised.

While the ultimate selection of operation in a given case can be made only after the lesion has been exposed, I submit now for review the main contention of this paper, that in the chronic callous ulcer of the stomach, the transverse resection or partial gastrectomy, as proposed by Rodman, is the operation of choice. That a gastrojejunostomy alone is sufficient in cases where we have only pyloric stenosis with a healed ulcer, with which to deal, is undisputed; that simple excision will suffice sometimes in the presence of a small ulcer with little induration and consequently little crippling of the gastric motility, will be acceptable to many, but the chronic indolent or callous ulcer, which as the term implies is an ulcer of long standing, usually a deep excavated ulcer, with an indurated base and with indurated margins extending wide of the ulcer itself, requires, in my judgment, more radical treatment. Such an ulcer may measure only two or three centimeters in diameter, but the induration extends over an area six to eight centimeters wide. These ulcers, in my experience, are mostly near or actually involve the lesser curvature; each of the sixteen selected cases, but one, involved the lesser curvature, they were all in the pyloric portion of the


Very small ulcer but age of patient
and enlarged lymph nodes suggested
malignancy.

S. C. Age 30, female File no. 9574 . Service of - Dr. Charles H. Frazier

Final Diagnosis. Chronic Gastric ulcer.

Operation. May 3, 1911.

Partial gastrectomy
Post gastro-jejunostomy
Appendectomy

Last report - Three and a half years later.

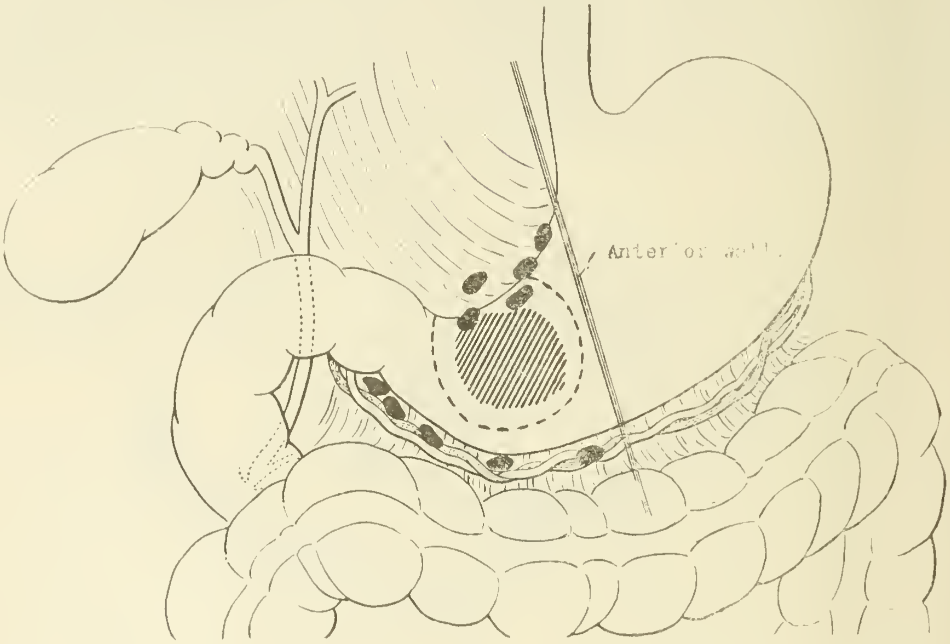
This patient has entirely recovered. Was operated upon again in October 1914, and removed a large ovarian cyst.

End result Complete recovery

stomach, that is to the right of the Hartman-Mickulicz line; almost half were saddle-backed ulcers extending from the lesser curvature down on both anterior and posterior walls.

The main point at issue is, Shall these ulcers be treated by gastrojejunostomy with or without pyloric exclusion, by excision or by partial gastrectomy? The answer to this question must take into consideration three factors, all essential and equally important,—the risk at operation or the immediate outcome, the incidence of cancer or the intermediate outcome, and the eventual condition of the patient or the end result.

In our series of sixteen cases, we had one death, but I firmly believe that greater care in the selection of cases, and above all, early recognition of the symptoms, will make the mortality still lower. For instance, in the one fatal case in our series, the patient was not a favorable subject for a major operation as the autopsy revealed a chronic nephritis, atheroma of the aorta, fibroid pleurisy and an apical lesion. v. Eiselsberg's clinic, in a series of



S. C. Age 29, female. File No. 11322. Service of - Dr. Charles H. Frazier

Final diagnosis Chronic gastric ulcer. Operation May 8, 1912.

Duration of Illness Eight years

Partial resection, Dec. 16, 1912
Posterior gastro-jejunostomy

Principal symptoms

Indigestion
Pain
Tenderness
Regurgitation
Total acidity - 44
Occult blood - negative

Complication

Last report 2½ years later

Gain in weight - 25 lbs.
Indigestion None
Gas on stomach None
Pain in stomach None
Vomiting after meals none
Discomfort None
Hemorrhage None

"Enjoys best of health, has had no trouble since operation."

End result Complete recovery.

fifty-six cases, reports nine deaths, a mortality of seventeen per cent., but even with this mortality, v. Eiselsberg writes that in cases of ulcer situated at distance from the pylorus as well as in cases with a high hydrochloric acid value, transverse resection is the operation of choice, as this gives the best security against subsequent complications. W. J. Mayo[4] writes as to gastric ulcers, "I believe they should always be excised if possible." In our series, one of the cases was a simple excision followed later by a gastrojejunostomy, but in the remainder, the situation and extent of the ulcer and indurated area was such that a partial gastrectomy was easier of execution than an excision would have been. To quote Mayo Robson again,[5] "For ulcers lying in the pyloric end of the stomach, Rodman's operation of partial gastrectomy, with complete closure of the duodenum and stump of the stomach and an independent gastrojejunostomy, is the most efficient procedure."

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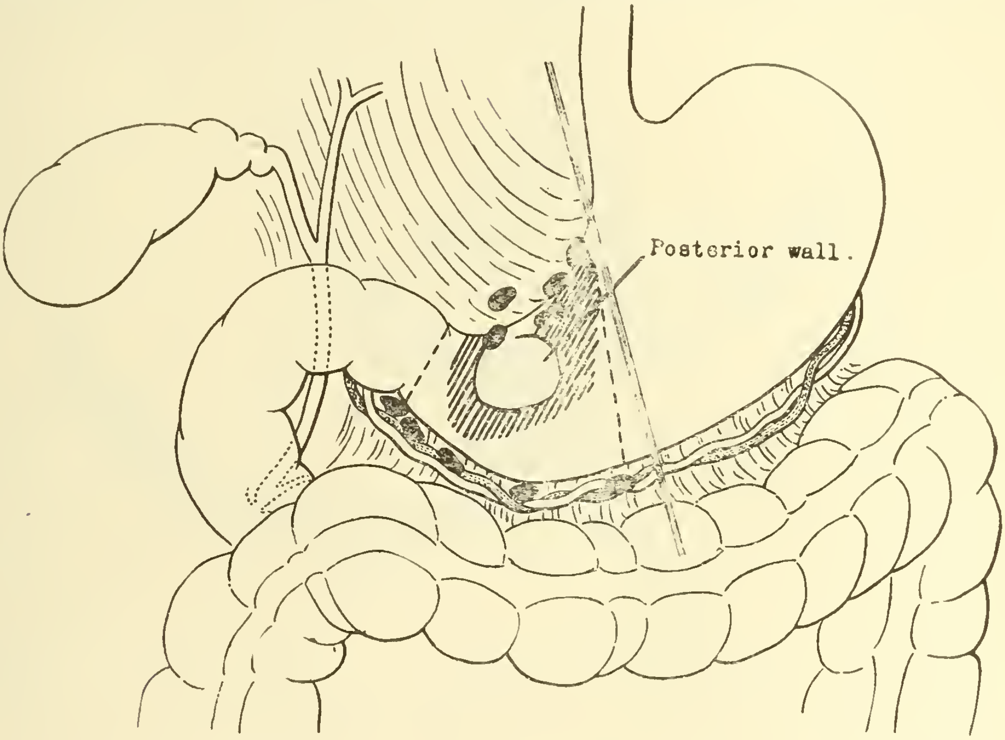
[4] Collected Papers, 1911.

[5] Keen's Surgery, Vol. VI.



W. C. Age 31, male

Final diagnosis Chronic gastric ulcer

Duration of disease two years

Principal symptoms

Pain
Hematomosis
Blood in stools

Service of - Dr. Charles H. Frazier

Operation November 5, 1909

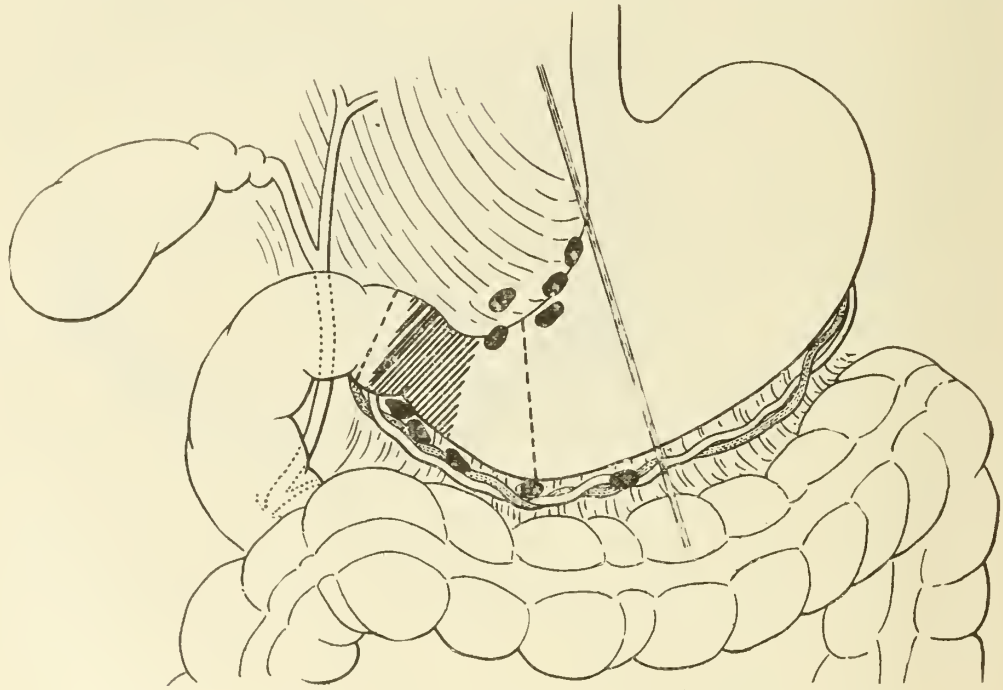
Partial gastrectomy
Posterior gastro-jejunostomy

Present Condition Five years later

Gain in weight - 8 pounds
Indigestion - No.
Gas on stomach - No
Pain in stomach - No
Vomiting - No
Hemorrhage - No

End result Complete recovery.

Taking up the eventual results as a criterion, I will present in the form of brief résumés, the results following partial gastrectomy in my own series, and it will be seen that in none has there been a suggestion either of recurrence of symptoms or of unpleasant consequences. (See diagrams.) This is almost an inevitable consequence of complete removal of the lesion, and of the establishment of adequate drainage and needs no further amplification. As a basis for comparison, I will refer again to the last report from Eiselsberg's clinic as it represents the results of a longer series, submitted by the author to a very critical analysis, and the most recent report from a thoroughly representative clinic. Of 334 gastroenterostomies for ulcer of stomach and duodenum, there were seventeen deaths, a mortality of five per cent., the majority of these were, however, recent ulcers, and death was due in seven instances to recurring hemorrhages which the operation did not stop. Of the surviving patients, a little over half were recorded as cured (134), about one seventh as improved, and thirty-one patients as unrelieved, of whom eight had duodenal ulcers. Of forty-one out of 334 patients, who were known to have died at various times after gastroenterostomy, twenty-three were traced



C. N. Age File No. 1373 Service of - Dr. Charles H. Frazier

Final Diagnosis Chronic gastric ulcer

Duration of disease Two years.

Principal symptoms

Loss of weight
Vomiting
Pain
Total acidity - 58
Occult Blood - negative

Operation - October 24, 1906

Partial gastrectomy
Posterior gastro-jejunostomy

Present condition Eight years later.

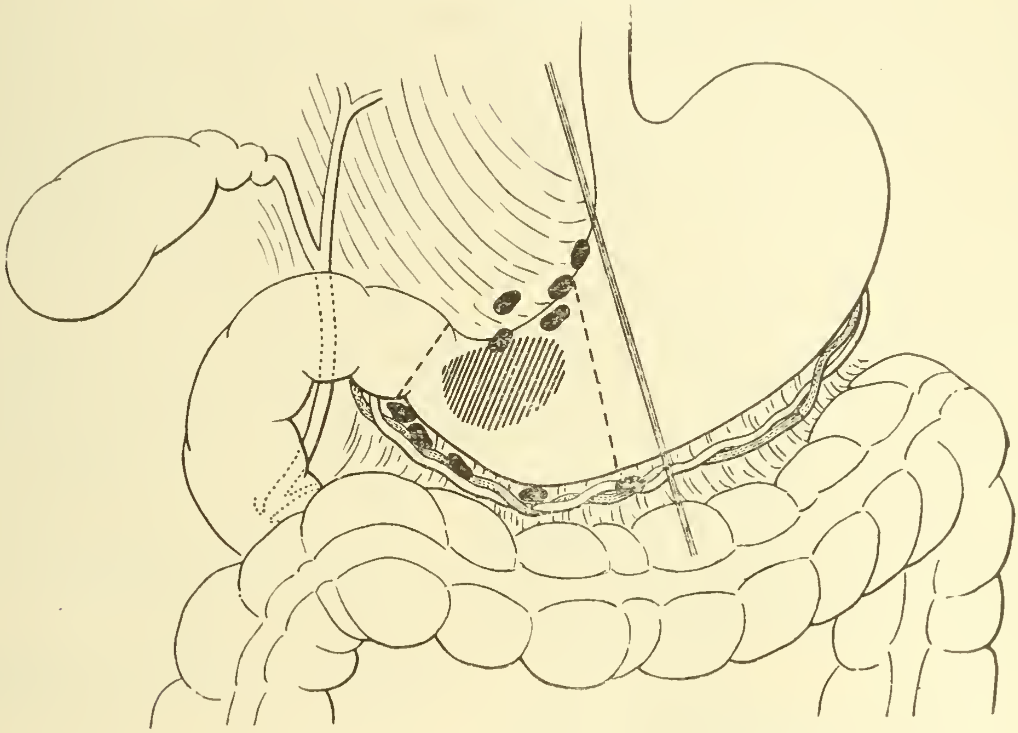
Gain in weight - 25 lbs.
Indigestion - very little
Gas on stomach - none
Pain - none
Vomiting - none
Discomfort after eating - occasionally if he eats too much

End result Complete recovery.

and of these thirteen, or more than half, died of cancer of the stomach and six, or a quarter, of extension of the disease. Here then is the crux of the situation, a considerable percentage of unrelieved, a considerable number of deaths from cancer.

The third argument in favor of complete removal of the ulcer-bearing area is the incidence of cancer. In the earlier portion of this paper, statistics were presented to show the prevalence of cancerous implantation upon ulcer bases, and we have just quoted the figures of v. Eiselsberg's series.

Granted, for the sake of discussion, that excision of the ulcer-bearing area of the stomach is too radical to be adopted as a routine procedure, by what means, may I ask, may a differential diagnosis between a benign, callous



A G. Age 53, File No. 31 Service of - Dr. Charles H. Frazier

Final diagnosis Chronic gastric ulcer

Duration of illness Several years.

Principal symptoms

Dyspepsia
Epigastric soreness
Pain
Vomiting
Gaseous eructations
Total acidity - 80
Occult blood - negative
Loss of weight - 25 lbs.

Operation November 26, 1909

Partial gastrectomy
Posterior gastro-jejunostomy

Immediate result Death. (three days)

Autopsy findings

Peritonitis
Fibroid pleurisy
Chronic nephritis
Apical tuberculosis
Atheroma of aorta

Comments

Poor operative risk
Only fatality in series.

ulcer and one with malignant degeneration be made upon the operating table? In looking over my records, I find that on several occasions, the lesion thought to be cancerous and removed on that account, proved on histological examination to be benign. There is no criterion which will guide the surgeon to distinguish by naked eye appearances between benign and malignant lesions. Enlarged lymph nodes are as characteristic of long standing ulcer as of early carcinoma. Even if, as in the Tubingen Clinic, Perthes[6] is in the habit of examining frozen sections of enlarged lymph nodes, the failure to find malignancy in the gland does not exclude the existence of incipient malignancy in the ulcer. So that negative findings are valueless. At one time, I thought that extensive infiltration of the gastrohepatic omentum indicated malignancy, but I found this to be just as often of inflammatory as of a malignant nature. Küttner[7] in a summary of his experience in 1100 cases of surgery of the stomach, writes there is no clinical observation, which establishes a differential diagnosis between callous ulcer and carcinoma with any certainty and even when the abdomen is open the differentiation is often not possible. With this in mind he has recommended and still recommends resection of callous ulcer.

As to the operation, partial gastrectomy, let me emphasize the salient points as I see them. The use of morphin before operations, the wound-blocking with novocain, careful anesthesia, preferably with nitrous oxid, which I am using now in more than three out of four cases, the avoidance of unnecessary sponging and of other traumatizing maneuvers, enables one to carry through a formidable operation without the slightest evidence of shock. There is no quickening of the pulse or any other expression of damaging effect upon the vital centers. In keeping pulse records throughout the operation, I have been surprised to see how undisturbed the circulation remains. The elimination of postoperative pneumonia by the anoci technic reduces the mortality of operations upon the upper abdomen where pneumonias are more prevalent.

Great care is taken to prevent soiling of the wound by stomach contents; after ligation of the vessels on either curvature, the subsequent steps are bloodless. Payr's clamps are infinitely superior to any other in that they never slip, and by crushing the mucosa and muscularis, leave a minimum amount of tissue to be inverted. The one step that demands the greatest care, is the closure of the duodenal stump. Three layers of sutures, one chromic and two linen, give the necessary security. The closure of the stomach wound is readily effected, and the operation concluded with a gastrojejunostomy. In the closure of the abdominal wound three through-and-through splint sutures are used in addition to the tier sutures and the patient placed immediately in the semi-Fowler position. In the first twenty-four hours, three pints of saline solution are given by proctoclysis and from that time on water is given in increasing quantities, followed by liquid nourishment and soft diet on the fourth day. One or more doses of morphin may be given during the first twenty-four hours, but from that time on, the patient is surprisingly free from discomfort of any kind.

From the results in my own clinic, from the arguments herewith presented and from the frank endorsement of authoritative writers, I hope a sufficiently strong case has been made in favor of the radical treatment of chronic callous ulcer by either excision or partial gastrectomy—I advocate the latter procedure, because in most instances, it is little, if any, more complicated, and because the likelihood of recurring ulcers or of any complications is reduced to a minimum.

SUMMARY.

The incidence of gastric ulcer has been constantly increasing with the introduction of methods for earlier and more accurate diagnosis. That gastric ulcer is often a precursor of cancer has been proved conclusively; hence a review of statistics as to the incidence of the latter disease should serve as a guide in our estimation of the frequency of ulcer, and should further emphasize the importance of the early diagnosis and treatment of gastric ulcer.

With the various methods now at our disposal, the diagnosis of gastric ulcer is not a difficult one; there are, of course, exceptional cases. The history should always arouse suspicion; the roentgenogram confirms in nine out of ten cases.

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[6] *Arch. f. klin. Chirurgie*, Bd. 105, Heft 1.
[7] *Arch. f. klin. Chirurgie*, Bd. 105, Heft 4.

I advocate without reservation, and unhesitatingly, surgical intervention in chronic ulcer of the stomach and duodenum, because the effect of surgical intervention is more enduring and more satisfactory than that obtained by medical methods.

The nearer to middle life the patient is, the more urgently do I impress the need of an operation for fear of cancer. Gastrojejunostomy alone, has left a trail of failures. Gastrojejunostomy with exclusion and infolding of ulcer is a distinct improvement. Transverse resection offers greatest assurance of a complete and enduring "cure."

THE SIMULATION OF GASTRIC AND DUODENAL ULCER BY ADHESIONS. DUODENAL DILATATION, VISCEROPTOSIS, ETC. THEIR RECOGNITION AND TREATMENT.

BY GEORGE P. MULLER, M.D.,
Philadelphia.

(Read before the Philadelphia County Medical Society, December 23, 1914.)

In a paper such as this, purporting to cover various extragastric lesions simulating gastric ulcer, in order to keep within reasonable time limits it is necessary to write rather cursorily of affections which deserve more extended notice. I was prompted to present this paper by reason of the occasional criticism of the surgical treatment of duodenal and gastric ulcer when here and there a physician finds a patient unrelieved by a gastroenterostomy done for supposed ulcer. All surgeons of experience admit this, and recently from the Mayo Clinic we have had several papers which suggest failures following gastroenterostomy and which discuss the reasons therefor. Some years ago when gastroenterostomy for ulcer was a rather new procedure the operation was performed in cases in which there was no justification for its performance, and we have now learned, often somewhat sadly I admit, that errors were committed and that some patients were even made worse. This seems to be inevitable because whenever a new surgical problem is presented for solution, and we think we have mastered it, we often overstep the bounds and treat similar but unsuited conditions by the same method. It is for this reason that I am presenting the conditions which simulate gastric ulcer and for which a gastroenterostomy or even a partial gastrectomy may be done without relief to the patient. Let us then outline the symptoms of gastric and duodenal ulcer, discuss them, discuss the more common lesions which simulate gastric or duodenal ulcer, and briefly refer to the unusual conditions which simulate.

There is but little difference in the clinical picture as outlined by Moynihan and by the Mayo Clinic, and it is interesting to note that in certain countries, especially Germany, the frequency of duodenal ulcer as seen in this country and in England is doubted; Ewald believes that in other countries diagnoses are wrongly made or even made on insufficient evidence or perhaps the German conception of the disease is too rigid. But as Goodman quotes, "We should never be the first to accept a new belief nor the last to abandon an old one," and the work of a host of surgeons has shown conclusively the frequent existence of duodenal ulcer.

It is often difficult, and it may be quite impossible, to differentiate, clinically, gastric and duodenal ulcers from other lesions causing gastric symptoms. It is often quite as difficult and it may also be impossible to locate the lesion in the stomach or duodenum if we have only the clinical picture to point the way. The symptoms of duodenal and gastric lesions may give exactly the same clinical picture, and for this reason we can not at all times be definite when we attempt the localization of the ulcer. The radiogram gives the clinician aid in these cases and, at times not only locates the lesion, but makes positive the diagnosis in cases with irregular histories. However, the clinical history is still our greatest factor in the differentiation of lesions causing gastric disturbance, and we should consider it carefully in all its phases.[1]

The most important feature of the history in the duodenal and pyloric ulcers is the periodicity of attack. By this I mean that the pain, gas, sour eructations and vomiting, coming on regularly after meals and more or less controlled by food, are not continually suffered from but come on in attacks at intervals of weeks or months, often without apparent cause but sometimes brought on by hard work, worry, exposure or infection. Secondly, the patient rarely fails to emphasize the fact that these attacks have been occurring for a long time, often many years. The most constant single symptom is pain, and in uncomplicated cases it always comes on from one half to four hours after eating, the time depending upon the location of the lesion; food, alkalies, lavage, posture and rest cause its cessation. A right-sided tender point, occult blood, hyperclorhydria and hypersecretion are also of affirmative importance but their absence must never negative the diagnosis. The *x*-ray finding, next to the history, is the one important means of diagnosis and the finding of hyperperistalsis and a residue in the stomach at the end of six hours makes the *x*-ray diagnosis of duodenal ulcer probable. There are certain cases in which it is difficult to make an exact diagnosis; one group gives the classical symptoms of gall-stones and it is only at operation that the true nature of affairs is detected. In another group the early history of recurring attacks of epigastric pain, etc., is absent and the first manifested symptoms are those of advanced chronic ulcer at the pylorus. In still a third group the symptoms resemble those of cancer, and these are the cases in which in the past the patients have sometimes been treated palliatively by gastrojejunostomy and the family told that death is only a matter of a short time, and then to the surprise of the surgeon, and often to his mortification, the patient lives on with increased health and comfort. These unusual cases, however, are not the rule and ulcer of the duodenum and pylorus without complication are usually clear cut in their symptomatology. In ulcer of the stomach proper the attacks are not so clear cut and the symptoms are apt to be continuous for long periods, are not often eased by food and more often affected by the taking of food. In the later stages of pyloric and duodenal ulcer stenosis produces the symptoms of gastric dilatation. In all of these cases the roentgen rays are of the greatest help and the writings of Carman, Cole, Pfahler, Pancoast, Case, and others, to speak only of our own countrymen, should be read to appreciate the advances which roentgenology has made in recent years.

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[1] Graham: *Boston Med. and Surg. Jour.*, 1914, CLXX., p. 221.

I have seen patients in whom rather obscure symptoms were entirely cleared up by the fluoroscopic study. In one patient I operated for duodenal ulcer and failed to find the lesion although there were many adhesions around the pylorus and duodenum. The incision was continued downwards and a thick, club-shaped appendix was removed. Marked improvement resulted for a time but then the symptoms recurred and to my surprise careful roentgen study by Dr. Pfahler revealed a perforated ulcer somewhere in the body of the stomach. At the second operation this was found on the posterior aspect near the greater curvature and adherent to the base of the transverse mesocolon and to the pancreas. The stomach wall was perforated and the floor of the ulcer was formed by the above-named structures. I resected the ulcer and the man is now enjoying good health. These are the symptoms described by physicians who have analyzed large series of cases, and yet these cases represent, to a certain extent, those that have been sorted out from the larger number of the so-called dyspepsia or gastritis cases in which the patients present themselves to the general practitioner. If we can get a clear-cut history of the symptom groups just indicated the diagnosis is easy, but we know the typical symptoms are not always present. "Each case is a law unto itself and accuracy in diagnosis is reached rather by a careful study of each individual case with its history, symptoms and physical signs and the admission of all possible evidence and consideration of every possible disease of the region with which we are dealing."[2]

Most patients that come to the office complain of eructation, burning at the pit of the stomach or in the esophagus, so-called sour stomach, fullness, distress, regurgitation, constipation, sometimes nausea, pain, vomiting, and a feeling of emptiness in the pit of the stomach. The gastric analysis may show an increase or decrease in the amount of acid or of hydrochloric acid; there may or may not be an excess in secretion. How are we going to separate them and diagnose those cases which are operable and those which are inoperable, differentiate appendicitis or gallstones or adhesions or ptosis or other things from ulcer?

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[2] Rowen: *Boston Med. and Surg. Jour.*, 1912, CLXVI., p. 587.

It would serve no useful purpose in this paper to discuss in detail the differential diagnosis, and a meager description touching only the high points would be very unsatisfactory. Each of us must realize our deficiencies in certain aspects of diagnosis and we can only master the diagnosis of upper abdominal disease by constant study. It is not always necessary for the physician to make an absolute diagnosis of the exact anatomic change. He must, however, decide whether the case is surgical or not and whether operation should be advised. Laboratory tests often prove weak reeds to lean on, but then most physicians misunderstand the so-called laboratory method. The test meal shows the secretory and often the motor state of the stomach exactly but does not tell us why they are so and so. When the stomach analysis shows hyperacidity it merely means that the mucous membrane of the stomach is under direct stimulation or that there is irritation from a neighboring or from a remotely situated organ. Chronic hypersecretion is merely an expression of an organic lesion in some part of the digestive tract or of those organs that pour their secretions into it, especially ulcer, appendicitis, and gallstones. Moynihan has wittily compared the hypersecretion of the stomach to the flowing of tears when a foreign body is in the eye.

We need not discuss these nonorganic lesions of the stomach associated with hyperacidity and hypersecretion and variously termed acute gastritis, chronic gastritis, indigestion, dyspepsia, gastric neurosis, etc. The first-mentioned improve immensely within one or two weeks under proper treatment and the improvement remains permanent. Under the influence of strain and worry or indiscretions in diet recurrence may follow and these again may be cured; but here we must be on our guard because gastric and duodenal ulcer may be markedly influenced by treatment, yet careful examination will elicit the fact that while they highly praise the efforts of their physicians, the ulcer patients are not absolutely cured and this is the essential diagnostic point. Do not place too much reliance upon the location of tenderness, upon vomiting, or upon hemorrhage either vomited or as occult blood.

Be careful about chronic gastritis, and the only mention I will make of cancer of the stomach in this paper is that any patient over forty who has chronic gastritis or dyspepsia or who has a so-called acute gastritis which does not promptly disappear, must be suspected; if he loses weight, strength and appetite and has a continuance of his dyspepsia he must be labeled cancer until you can prove by other findings, by the *x*-ray, or by operation that something else (colon, prostate, or kidneys for instance) is at the bottom of the trouble.

I do not know how to handle the gastric neuroses in a few words; their number is diminishing as new organic causes are worked out. They may be associated with the congenital ptotic individual or simply be part of an unstable nervous system.

Osteopathy, mental healing, electricity, and other "shell games" are often potent to cure but the abandonment of these patients by the regular physician is too often done without adequate, scientific care. They can be studied, improved, or even cured. They suffer from distress, fullness, throbbing sensations, eructations, regurgitations, etc. The periodicity of attack, the relation to food and so on are usually absent and pain is not particularly prominent as a symptom. They should all be studied carefully by the roentgenologist and often referred to the neurologist.

I have tried to group the gastric and extragastric lesions simulating ulcer into four groups; the duodenum is included with the stomach: (1) Lesions of the stomach: Gastritis, gastric neuroses, gastroptosis, atony, dilatation of the duodenum. (2) Neighboring lesions involving the stomach: Pancreatitis, cholecystitis with adhesions, omental adhesions, coloptosis, iliac stasis, etc. (3) Reflex causes: Appendicitis, gallstones, thoracic lesions, pelvic disease, etc. (4) Other causes: Epigastric hernia, tabes dorsalis, the erythema group, etc.

We have discussed the first group and from the others let us pick out the important ones as seen so often in practice. I will entirely omit any discussion of cholecystitis, gallstones and pancreatitis, not because they are unimportant but because you have so often heard them discussed. We must also, for want of time, omit any reference to ulcer in the cardiac portion of the stomach. Those of you who were so fortunate as to hear Dr. Deaver's paper on pain and its discussion will understand why certain diseases can be confused, diseases the principal symptom of which is pain. When pain is definitely localized its true significance can usually be appreciated but when referred it opens up many possibilities. I have discussed the paths of conduction from the splanchnic afferents to the somatic afferents and the reference to the abdominal wall in a paper on omental adhesions read before the State Medical Society in 1913.[3] From this I will quote the following:—

> "We should be cautious in making a diagnosis of ulcer in a patient previously operated on unless we have eliminated the possibility of an omental adhesion dragging upon the stomach and producing similar symptoms. A careful study of the case will reveal the fact that the symptoms in the latter instance are due to the drag on the parietal peritoneum of the viscera affected, to certain interference with its function and to the point of irritation in the abdominal wall at the area of adhesion. The element of inflammation will be absent. If the adhesion is suspected a careful series of x-ray plates or sometimes the use of the fluoroscope alone will determine the diagnosis. The importance of differentiating between these conditions can best be appreciated by those who have made an incision in the upper abdomen for suspected disease and have had to make a second incision in the lower abdomen in order to release omental adhesions. The differential diagnosis is also of importance to those patients who refuse a second operation because no method of internal treatment, belts or mechanical exercise, will help to replace an organ pulled down by an adherent omentum."

Since then I have seen an additional case diagnosed as ulcer in which we were able to make a correct diagnosis before operation. One must be careful, however, to remember that duodenal ulcer and appendicitis are often associated and consequently the incision is best made through the right rectus and rather high so that not only the adhesions can be removed but the duodenum can be investigated.

What shall we say of intestinal stasis, that most fascinating problem that is attracting so much attention at the present time, embracing as it does the whole field of visceroptosis, congenital bands and membranes, kinks and adhesions. The subject is so vast, so much involved, that several evenings could be devoted to it alone. Just as appendicitis may reflexly produce stomach symptoms, so will the mobile cecum and the Lane kink produce symptoms of "dyspepsia" although never quite simulating ulcer; they are more like the reflex symptoms of pelvic disease in the female. If the hepatic flexure drags on the fixed point of the duodenum the resemblance to ulcer may be very close, even to the production of hypermotility of the stomach. I have seen several of these and relieved one case completely by free division of bands and separation of the transverse from the ascending colon. When movable kidney is associated the resemblance is often marked and in such cases I would separate the adhesions about the hepatic flexure and then bring the posterior face of the flexure through a small incision in the peritoneum below the kidney and anchor it to the deep fascia of the loin after suspension of the kidney. I have done this in one case with remarkably good results.

In cases of midline coloptosis the colon may pull down the stomach; it is not necessary that stasis be present, however, and the symptoms may be entirely referable to the stomach. There are two types: Pyloric gastroptosis, an exaggeration of the vertical type of stomach so frequently encountered in the healthy person, and part of the visceroptosis; it is due to relaxation of the gastrohepatic omentum; it is rarely productive of symptoms and usually exists without stagnation and often with hypermotility. In a second type, the midline ptosis, the stomach goes down with the colon and, the pylorus being relatively high, we may see the symptoms suggestive of an obstructing ulcer of the pyloric region. Periodic pain, often referred to the back and relieved by vomiting, gas, sour eructations, and tenderness in the epigastrium may be present. But the symptoms depend on the quantity and not the quality of food and relief may be experienced by lying down, especially when turned on the right side. The physical state of the patient, often characteristically ptotic, should put us on our guard and a roentgen study will usually clear up the diagnosis. The papers of Beyea of Philadelphia are noteworthy contributions and we have performed his operation and the last Coffey operation many times, often with cure or marked amelioration of the symptoms. But gastropexy alone will not cure these cases; prolonged rest in bed, fattening up and proper belting are absolutely essential.

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[3] Pa. Med. Jour., 1914, xvii., May.

The novice in surgery will often make these patients worse, especially if he tries to do any suspending of the extreme atonic, flabby stomach.

Duodenal dilatation as a separate entity has exerted a certain attraction in my own mind for a long time. I have been on the verge of publishing a few notes about it for over a year and have even listed the paper for appearance in Dr. Piersol's journal. I am not quite ready yet, however, especially as Harris of Chicago last spring antedated some of my observations. You may remember that eight or ten years ago Ochsner published some observations on duodenal dilatation and called attention to a possible duodenal sphincter in the third part; this sphincter has been repudiated by other observers but in one of my early abdominal operations I encountered a distinct dilatation of the duodenum in a suspected ulcer case and have since seen five or six others, for one of which I anastomosed the third portion of the duodenum to the jejunum through the transverse mesocolon. Codman, Stavely, and Bloodgood have also written on this (chronic gastromesenteric ileus they call it) and believe it to be due to compression by the root of the mesentery, this theory being based on the analogy of the acute variety and on certain anatomic studies made years ago by Dwight on the form of the duodenum. Personally, I partly agree with Harris,[4] who has reported cases and believes that as the large bowel comes across the upper abdomen, in rotating it disturbs the retreating edge of the anterior mesogastrium and lays it down as a ligament across the duodenum. Lane has also had his eye on this condition and has described and illustrated duodenal kinking and dilatation. He believes the obstruction to occur from ptosis of the ileum, dragging the mesentery down and kinking the duodenojejunal junction. His pupil, Jordan, pictures this in x-ray reproductions, but Hartz, another English roentgenologist, denies that intestinal stasis leads to duodenal kinking, dilatation or ulceration.

I was interested recently to see that Cole calls attention not only to distention of the "cap" but also states that the descending and horizontal duodenum may be filled by an active gastric peristalsis and not evacuated for some time in consequence of the inhibition of duodenal peristalsis. He, in common with Lane, finds often an associated distention or dilatation of the terminal ileum but believes the duodenal stasis to be due to a chemical reflex. At any rate duodenal dilatation does occur from reflex or mechanical causes, and from my own limited observation I believe it may result in symptoms simulating duodenal ulcer. The surgeon must avoid gastroenterostomy, however, in cases uncomplicated by extensive adhesions and must separate the reflex from the mechanical type and if he knows how, may often relieve either group by a well planned and well executed operation.

Let us next consider appendicular gastralgia or appendiceal dyspepsia as it is variously called. Although Ewald in 1889 described it under the title of "appendicitis larvata," his idea was not generally "picked up" by clinicians. Most of us had thought that the appendix had retired from its position as chief factor in the drama of abdominal disease and given place to duodenal ulcer, but it bobbed up again as causing the simulation of ulcer symptoms. Intestinal stasis certainly now occupies the chief place in the limelight of medical attention but again we are threatened with the statement that appendicitis causes this, and that appendicitis *in utero* causes the various bands and membranes we read about. We must carefully distinguish two different states, —appendicitis with ulcer and appendicitis with symptoms simulating ulcer.

A number of writers have called attention to the association of appendicitis and ulcer, gastric or duodenal, and it is believed that the ulcers may be due to emboli from thrombotic veins of the omentum, the appendix, or the mesoappendix, in cases of appendicitis. Another group of writers believe that certain toxins may be generated by the appendix and have a specific action upon the mucous membrane in the stomach and duodenum. Most surgeons who have had experience in abdominal diseases make it a point to investigate the appendix in all cases of gastric or duodenal ulcer, if such be possible.

How can chronic appendicitis simulate ulcer? The stomach receives its nerve supply from the splanchnics *via* the solar plexus and from the vagus terminating in the terminal ganglia. The latter reaches as far as the ileocecal valve and the mesenteric sympathetics also connect with the solar plexus. This may be said to be the anatomic explanation. It is interesting to speculate at this point. If the vagus does not reach as far as the appendix the effect on the stomach would be manifested by the sympathetic. Among the important sympatheticotonic symptoms and signs we find low gastric acidity, hypersecretion, lessened intestinal tonus (producing flatulence) and constipation. These are more frequent in appendiceal dyspepsia than the vagotonic symptoms, namely, hyperacidity, lessened secretion, vomiting, pylorospasm, etc. If the appendix is adherent, however, to the terminal ileum, and it often is, the latter might be present and they often are. This is pure speculation, of course, but it might be worth while to work out the gastrointestinal symptoms in chronic appendicitis on this basis. The vegetative nervous system generally has been overlooked in the past and neurologists have mostly spent their time on the central nervous system.

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[4] *Jour. A. M. A.*, 1914, LXII., p. 1211.

Another explanation, and one based on physiologic grounds is that the appendix influences the ileocecal sphincter, produces a certain amount of ileac stasis and reflexly causes duodenal stasis which produces symptoms. Probably both bear a part and we know that appendectomy often causes the so-called dyspepsia.

The symptoms of chronic appendicitis with reflex gastric disturbance are epigastric pain, gas, vomiting, sour stomach, and pyrosis. The symptoms, however, are irregular, caused more often immediately by food, and only rarely does food give ease. The patient complains of a bloated condition throughout the abdomen generally and the symptoms are often brought on by exertion. There is sometimes tenderness over McBurney's point but more often there is none. I have had no success in the various methods of inflating the colon in diagnosing chronic appendicitis and the *x*-ray picture is very unreliable unless there are adhesions. I can not refrain from remarking that there is no such lesion as chronic appendicitis. Inflammation is an acute process and what we really mean when we speak of chronic appendicitis is that, as a result of acute lesions, obliteration of more or less of the lumen, stricture of the lumen, peritoneal adhesions or fecal concretions exist. Sometimes the patients give a history of the previous acute attack; sometimes they do not remember this.

Finally, do not forget that chronic appendicitis with gastric symptoms may be simulated by the action of congenital bands and membranes persisting in the right iliac fossa. No surgeon at the present day has the right to fish out the appendix without investigating the right iliac fossa any more than he has a right to operate on ulcer without examining the appendix. No one wants his abdomen decorated simply to have the appendix in a bottle; he wants to be cured of the existing lesion. We have had a number of these cases recently and usually find them subjects of right-sided ptosis or membranes.

An interesting and fairly frequent condition which may simulate gastric ulcer is an epigastric hernia. The little sac bulges through the median line and is usually surmounted by a pad of fat. Epigastric pain, gas, and sometimes vomiting are noted. I operated on such a case in the St. Agnes Hospital last year where gaseous distention and intense pain came on in attacks every few days. There was no vomiting; the patient has been completely relieved since the repair of the hernia.

As we are not discussing the acute lesions of the abdomen, but little mention need be made of pneumonia, pleurisy, or pericarditis in their relation to epigastric pain. In common with other surgeons, I have operated for acute appendicitis, once, when the child had a beginning pneumonia, and recently nearly operated for perforated gastric ulcer, but suspected the chest and postponed operation fortunately, because the true condition of affairs was soon apparent. Chronic tuberculous diaphragmatic pleurisy[5] may resemble gastric ulcer (pain, going through to the back, vomiting, gas) due to adhesions between the diaphragm and basal pleura causing pain referred along the course of the lower intercostal nerves to their termination over the abdomen. Be on the lookout for these cases and of course keep them away from operation. I have twice had patients referred to me with a heart-liver syndrome, once with the diagnosis of gastric ulcer and once of gallstones. In another case I operated and actually opened the stomach for inspection in a case probably of early splenic anemia, when distinct ulcer symptoms were followed by hematemesis. Beware of hematemesis as an indication for operation; it is an uncertain and elusive symptom and usually indicates some toxic erosion and not a surgical ulcer.

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[5] See Mace: *Jour. A. M. A.*, 1914, LXII., p. 674.

The visceral crises of the erythema group has been well described by Osler and others[6] and has been misdiagnosed gastric ulcer by reason of epigastric pain and hematemesis. The attacks may be of great severity, occur chiefly at night, are independent of eating and are rarely accompanied by any tenderness. The characteristic skin eruption is usually present.

The gastric crises of tabes dorsalis is another interesting phenomena often mistaken for gastric ulcer or especially for gallstone colic. The simulation of either disease is perfect and the diagnosis well-nigh impossible, unless the other characteristic symptoms of locomotor ataxia are detected. Dr. Frazier has had a beautiful result following resection of the seventh, eighth, ninth and tenth posterior roots in a patient previously explored by another surgeon for gall-bladder disease. It is interesting to note that Exner and Schwarzmann[7] report that in the course of their "vagotomy operations for tabetic crisis they encountered six cases with evidence of ulceration." They then examined the records of seventy-five cases of tabes that had come to autopsy and found five cases of ulcer and three cases of cancer and these all showed typical gastric crises in the clinical records.

There are other conditions and lesions which simulate gastric ulcer but we have heard enough to know that the matter is not so simple as we are sometimes led to believe. This does not mean that we must become confused or discouraged at the outlook, but rather must buckle on our armor and get to work with the determination that our mistakes of omission will be few and that no patient can accuse us of the neglect to make the effort to solve the problem. The history of the case painstakingly taken, is the keynote; it determines whether we need certain so-called laboratory examinations or better still a radiographic examination. These may lead to a surgical consultation and finally to an exploratory operation even. But the need of the adjective "exploratory" should grow less and less. Indeed, Cole says it is old-fashioned. The sequence of events must take place and with only reasonable delay because the shadow of cancer lies behind every ulcer and perforation is sometimes a sudden catastrophe. The history may make the diagnosis and point the way to treatment, the laboratory test and *x*-ray study help to classify obscure conditions and show what the stomach is doing in its secretory and motor functions—only that. They help out the history and may correct the treatment.

Finally, there is the group that defy diagnosis, that are intractable to treatment; the open abdomen lays bare the stomach and duodenum, and sight and feeling take the place of surmise. Beware of recurrence, however, and do not be deluded by improvement. Mayo has said that the indication for operation in chronic ulcer comes "after nine complete and permanent medical cures."

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[6] See *British Med. Jour.*, 1914, I., p. 517.
[7] *Wien. klin. Woch.*, 1912, XXV., p. 1405.

ABDOMINAL PAIN, ITS SIGNIFICANCE AND DIAGNOSTIC VALUE.

BY JOHN B. DEAVER, M.D.,
Philadelphia.

(Read before the Philadelphia County Medical Society, October 28, 1914.)

Perhaps no better definition of pain has been given than the picturesque statement of Agnew, that "pain is the language of a suffering nerve." In order to diagnosticate disease we must be able to read the language. At least ninety per cent. of all diseases begin with pain or give rise to it at some time in their course. At times the language is clear and unmistakable, but again it is merely the softest lispings audible only to the ear of the lover—of our art. The most dangerous warnings may be couched in the mildest terms, while stormy outbreaks may mean only the performance of a salutary act.

Under ordinary circumstances pain is the result of undue stimulation of nerve fibers by mechanical, chemical or thermal agents. Such pain is objective. Its cause, if of sufficient severity, produces abnormal alterations of the body tissues which are the processes of disease. The pain is the central registration of the injury.

There is a type of pain which has no external physical basis. It is a product of disordered mental action. This is subjective pain and is illustrated in the phenomena of hysteria. Such pain belongs to the domain of the neurologist. It is commonly associated with stigmata which enable it to be distinguished from objective pain. It is, moreover, exceedingly rare as compared with objective pain.

We are not justified therefore in treating pain with indifference, nor in regarding it as an entity. As pain itself is nothing but the expression of a tissue injury, it is a mere confession of ignorance to give it a name which has no pathological significance. All the various "algias" must be refused recognition and replaced with terms that convey an understanding of the underlying process. That it is often difficult and at times impossible to do this in the present state of our knowledge no one will deny, but we must continually protest and struggle against our present limitations and be quick to take advantage of such new observations as will enable us to lay off the cloak of ignorance and array ourselves in the garments of light.

The word abdomen is derived from the Latin *abdere*, meaning to conceal, and it has surely merited its name for several thousand years whether you use the Biblical or evolutionary calendar. The pathologist partly reads its secrets and after him the surgeon has found it a veritable Pandora's box of troubles which do not, however, always fly away when the box is opened.

No more stimulating example of the discovery of the hidden cause of pain, which had been long observed and misinterpreted, can be imagined than the recent demonstration of duodenal ulcer as the source of a frequent type of gastric pain. How long did this disease masquerade under the names of acid dyspepsia, hyperchlorhydria, gastralgia, etc.! Within ten years after extensive study of this syndrome began in the light of living pathology, as disclosed by the aseptic scalpel, Moynihan was bold enough to proclaim that "peristent, recurring hyperchlorhydria is duodenal ulcer" and that statement has been shown to have only the few exceptions that prove the rule.

The first great obstacle which has stood in the way of the proper appreciation of the significance of abdominal pain has been the belief sedulously sown among the profession in former years that the majority of pains in this region were the result of disordered function. Placing the cart before the horse, it was gravely taught that perverted nervous influences were the common causes of abnormal motor, sensory or secretory phenomena. The so-called neuroses figured largely in abdominal diagnoses. Hypermotility and hypomotility, hyposecretion and hypersecretion alike were readily explained as evidences of excessive or insufficient nervous stimulation or as inhibitory action. Pain was a hyperesthesia or resulted from the irritating effects of perverted secretions or from excessive muscular activity.

Since the surgical era began the rapid linking of disordered function with definite pathological lesions of the abdominal viscera has driven the neuroses into a very small field which is destined to be further circumscribed. We have thrown off in this way the shackles of a specious but false conception of the origin of abdominal symptoms.

The second great difficulty which has hampered abdominal diagnosis is the inability of the nervous system to localize accurately sensations received from visceral areas. The power to localize sensations is partly a phylogenetic development of the nervous system, partly a matter of education on the part of the individual himself.

In the visceral areas there is but little need for localization. Under normal conditions the visceral activity rarely reaches the consciousness. We can at the present time especially appreciate the saying, "happy is that nation which has no history," and we may also say, "happy is the man who has no visceral sensations." As a general rule sensations from the visceral area which are of a painful character mean trouble, pathology, disease. The real difficulty arises when we attempt to say which viscus or part of the viscus is affected. The nervous system is developmentally unfitted for such localization and is unskilled by lack of practice. We occasionally find patients who are the subjects of chronic visceral disease who have learned the seat of their trouble and from the recurrence of symptoms are able to recognize with certainty the sensations which accompany such disturbances. But this presupposes the diagnosis and, after all, is but his own set of sensations. In the usual case the diagnosis is yet to be made and very similar lesions so far as we are able to see will give rise in different individuals to the most remarkable variations of sensation in intensity, site, radiations, duration, relations and control.

Failure to locate accurately the source of visceral pain is further complicated by misreference of pain phenomena by reason of the imperfect development of the localizing apparatus. Certain instances of the misreference of pain are so common and so well understood that we accept them unhesitatingly as signs pointing towards disease in the proper organ of their origin. The pain beneath the right scapula in gallstone colic and pain radiating to the genitalia in renal colic are well-known examples. Disease of the hip joint not infrequently causes pain in the knee. For the understanding of these and other peculiar manifestations of faulty pain localization it is necessary to be familiar with certain modes of nerve action. When irritation occurs along the course of nerve fibers, the pain is felt as being produced in the principal distribution of those nerves. This is known as referred pain and may be due to lesions in the cord, the posterior roots or ganglia, or in the nerve trunks themselves. Examples of referred pain due to disturbance in the cord are the pains of gastric crises, and the well-known girdle pains of tabes dorsalis, transverse myelitis, and cord tumors. Referred pains from lesions on the posterior roots or ganglia may arise from herpes zoster or the pressure of foreign bodies, abnormal bony deposits or from tumors or inflammatory processes. It is well to bear in mind therefore that pain in the abdomen is *per se* no evidence that the lesion is in the abdomen. When disease known to affect the cord or posterior nerve roots is present, abdominal pain should be carefully analyzed with reference to this point.

A second characteristic of nerve action which has to be reckoned with in diagnosis is to be found in the fact that the path of a sensory impulse on its way to the cord or brain may be tapped *en route* by adjacent neurons in the posterior root ganglion or in the cord and that these secondary impulses reaching the sensorium are there interpreted as pain in the region supplied by this second set of neurons. In some instances this is a mere overflow phenomenon giving rise to painful sensations in adjacent areas as well as in that primarily affected. In other cases the entire impulse is shunted off, with the result that no pain is felt at the site of the lesion while it does seem to come from the area supplied by the tract which ultimately brings the impulse to the brain. In the first instance we have associated or sympathetic pain, a good example of which is the pain in the axilla and arm which often accompanies angina pectoris. According to McKenzie, the axilla, arm, hand and heart are supplied by contiguous nerve roots, the third, second and first dorsal (Behan), and thus a stimulation of one segment is conveyed to the adjacent segment and the sensation is referred to the peripheral distribution of these segments. It is less often seen and not so well known that angina may give rise to intense epigastric pain simulating acute surgical disease of the upper abdomen. Abdominal pain associated with pleurisy or pneumonia, particularly in children, is probably of a referred nature.

When the entire nervous impulse is diverted we have reflected or reflex pains, the most numerous and important of which are those due to pathological changes in the internal viscera. As Lennander showed long ago, the viscera are insensitive to ordinary pain-producing stimuli. They may be cut, burned or torn without eliciting pain. Nevertheless injury to the viscera sets in motion centripetal impulses which are carried to the root ganglia and to the cord and there react in the production of motor and sensory phenomena. The spinal nerves of the segment affected which have a more intimate communication with the sensorium are irritated and according to the degree of the irritation we have in the motor sphere rigidity and spasm, and in the sensory sphere, referred pain or hyperalgesic areas.

All these points so briefly considered have important clinical applications. In the upper abdomen the palm of the hand will cover an area containing the pyloric region, the duodenum, the head of the pancreas, the gall bladder and common duct and the hilum of the right kidney. These organs are the frequent seats of diseases that give rise to pain as a most prominent symptom. It is largely by the reflections and radiations of pain that we are given a clue to the organ affected. It is necessary to be familiar with the various types and degrees of pain that disease of these organs may cause. Typically renal pain is lumbar, tending to radiate downwards; gall-bladder pain is hypochondriac, tending to radiate to the right. Duodenal pain is high epigastric; gastric pain is epigastric, tending occasionally to radiate to the left; pancreatic pain is low epigastric or central. It is in the milder forms and beginnings of disease that the location of pain is of the greatest value and therefore greater attention should be devoted to the milder evidences of organic abdominal disease for it is a decided trend of the times and a most hopeful one to intercept pathological processes at an early stage in their career. As time goes on secondary changes occur in the way of spreading inflammation, fibrosis or neoplasm. Enveloping adhesions form, binding neighboring organs in their grasp and altering the clinical picture. A considerable proportion of the cases which reach active intervention have by this time accumulated sufficient pathology and present such an intricate array of symptoms that nothing short of inspection will reveal the actual condition. It is very common to find associated lesions in the abdomen. Chronic disease of the appendix is frequently found with pelvic inflammation as well as with duodenal ulcer, cholecystitis and gallstones. Pancreatitis often is associated with cholecystitis. Pyloric and duodenal ulcerations in many cases throw out adhesions to the gall bladder or liver. At times it is possible to analyze the resulting symptoms. Thus as Robson has pointed out "the relation of the sympathetic nerves with the seventh, eighth and ninth spinal roots accounts for the superficial tenderness of the epigastrium in ulceration, and for the reflected left shoulder blade pain. This is well shown in pyloric adhesions complicating cholelithiasis, when, though the pain is originally on the right, passing to the right infrascapular region, as soon as the pylorus becomes involved in the inflammation or tied down by adhesions, the pain passes also to the left subscapular region."

Of all the organs in the abdomen the stomach presents the greatest variety of symptoms and the most difficult to analyze. Mayo has well said that forty per cent. of the gastric symptoms are due to causes outside of the abdomen, forty per cent. to causes within the abdomen other than the stomach, and only twenty per cent. are due to disease of the stomach itself.

The stomach is most susceptible to toxic and reflex influences. If general disease of the stomach is excluded gastric symptoms should prompt a careful and systematic survey of the abdominal organs, particularly those most commonly the seat of disease. The appendix is quite as commonly the cause of gastric symptoms as is disease of that organ itself. Grossly insignificant chronic disease of the appendix may set up pylorospasm with pain, retention, fermentation and secondary gastritis.

One of the most important lessons in connection with this subject is to investigate carefully by history and examination of the right iliac fossa every case in which the patient complains of epigastric symptoms commonly referred to the stomach.

The diseased gall bladder also masquerades as a gastric affection more often than it gives its own characteristic symptoms. To make an impression on students I often say, "fair, fat and forty, belching gas—gallstones," I grant this is a trifle dogmatic, but given intermittent gastric distress, indigestion and this combination, it is remarkable how often the diagnosis is justified.

The diagnosis of appendicitis in the average case is so easy that it is liable to several pitfalls. Unless a case is outspoken in all its typical characters it is wise to think of the right genito-urinary tract. Inflammation of the vas at the internal ring is very deceptive but is not often seen. More often a floating kidney will simulate chronic appendicitis and a stone encysted in the ureter has caused many mistakes. Stone in the kidney, particularly if it be embedded in the renal substance where it does not cause typical symptoms, is very easily confused with a high appendix. Only a thorough examination of the urinary tract in cases in any way doubtful will prevent humiliating blunders.

The time is too short to contemplate even touching upon the multitude of interesting intraäbdominal conditions that give rise to pain. Diverticulitis, the various obstructions, perforations, pelvic conditions, inflamed glands, acute and chronic peritonitis, purpura, abdominal aneurysm, neoplasms in the various situations and many more conditions must be passed over. I will take time only for a few words concerning adhesions and postoperative pain.

Adhesions are of two types, congenital and acquired. Of late there has been a disposition to exaggerate the importance of anomalous folds of peritoneum presumed to be of congenital origin and thought to be endowed with the most malevolent potentialities. Kinks and pericolic membranes formerly overlooked have been advanced as the cause of many of the most serious abdominal and general ailments that persecute the race. Most serious resections and side-tracking anastomoses are being freely advocated and performed. That there is a kernel of truth in this work no one will attempt to deny, but that it is in grave danger of being overdone is also certain. We have gone through the fever of removing ovaries that should have been left. We have had and are having a gastroenterostomy plague. I hope we are not to be afflicted with an ileosigmoidostomy epidemic.

That there are abdominal adhesions which cause all grades of symptoms from the mildest to the most severe is true, but it is most difficult for anyone to say what is and what is not a normal arrangement of the intestines for a particular individual. People's viscera differ as much or more than their faces and physiques. Omental or other adhesions I do not hesitate to sever when found in unusual positions. More extensive operative work involving an interference with a poorly understood physiology and for other indications than obstructive symptoms, is rash surgery.

Acquired adhesions are usually the result of inflammation or rough surgery. They are important because of the pain which they may cause, the interference with function or obstruction of the bowel that may result and because of the difficulty that attends radical treatment. Nature is the most wonderful artist at the removal of adhesions. She should have time and encouragement in her efforts. Practically all cases of abdominal disease complicated by peritonitis and most cases involving extensive surgery whether infected or not have more or less adhesions after operation.

A careful, light diet and attention to the bowels is usually the only treatment needed. One caution is necessary. Obstructive symptoms in any patient who has had a previous operation or is believed to have abdominal adhesions call for surgical interference without a moment's delay. Many lives have been lost by not observing this rule. Adhesional pain should never be treated with narcotics. At least a year should elapse before operative relief of postoperative adhesions is advised except in the case of serious symptoms. In the majority of cases long before that time absorption or accommodation has occurred.

Injury to nerves during operation is another frequent cause of postoperative discomfort which at times lingers to the annoyance of the patient and surgeon alike. This also clears up in practically all cases with expectant treatment.

Pain occurring immediately after operation and that which begins first two, three or more days after operation is of more surgical than general interest. I wish to say, however, that there is a mistaken idea as to the amount of suffering that is to be endured after the ordinary operation. The use of narcotics at this time has been very greatly overdone and while conditions at present are not so bad as formerly there is still too much morphin used as a routine measure after abdominal operations. If morphin did not inhibit peristalsis and elimination and depress vitality there would be no objection to its use up to the point of robbing the postoperative period of every trace of discomfort. Those of us who do not use it find that very few patients really require it. For the proper indications or extreme restlessness or pain it is invaluable, but it should be reserved for these alone.

When, after an abdominal operation, pain makes its appearance on the second or third day or later, the diagnosis is often difficult but of extreme importance for the patient. Three conditions are chiefly to be considered, simple distention, peritonitis and obstruction. The pains of distention and obstruction are as a rule colicky and wavelike, while that of peritonitis is more steady, diffuse and unremitting. In the first case the pain is quite definitely related to peristalsis, but in peritonitis no such relation is observed. Peritonitis causes tenderness and muscular rigidity which are absent in distention or mechanical obstruction. The temperature is an unsafe guide but is more likely to be elevated in peritonitis and the pulse is more markedly affected in rate and volume. As between simple distention and obstruction, the difference in the severity of the symptoms is the chief guide. When the intraäbdominal conditions present both obstructive and inflammatory characteristics, as in the ileus which accompanies general and some local peritoneal infections, the difficulties are markedly increased. The most important single feature in differentiation is the character of the pain, whether wavelike and intermittent or steady and associated with tenderness.

In conclusion, I may say that I realize more and more the difficulty of attempting to classify and systematize abdominal pain in its relation to visceral lesions. There is a rough parallelism which is sufficient in most cases to warn us of the presence of a pathological process and often indeed give us much information as to its nature. Very often, however, we are obliged to rely upon experience and our knowledge of the probabilities.

FOR PIN WORMS.

Mosse recommends injections of cold salt water several times daily, with suppositories containing the following:—

℞ Mercurial ointment,	gr. iv.
Benzoinated lard,	gr. viij.
White wax,	gr. viij.
Cacao butter,	ʒss.

(Med. Herald.)

FOR DIARRHEA OF CHILDREN (Ostheimer).

℞ Hydrarg. chlor. mit.,	gr. j.
Salol,	gr. v.
Sodii bicarb.,	gr. x.—M.

Ft. chart. No. x.

Sig.: One powder every half-hour for ten doses.

A CASE OF PERFORATION OF THE ESOPHAGUS FOLLOWED BY SEPTIC INFECTION AND ENDING IN RECOVERY.

BY GEORGE M. COATES, M.D.,
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AND R. MAX GOEPP, M.D.,
Professor of Clinical Medicine, Polyclinic Hospital; Assistant Professor of Clinical Medicine, Jefferson Medical College; Assistant Visiting Physician to Philadelphia General, and Jefferson Hospitals, Philadelphia.

On February 13, 1914, I was called to see a patient at the Pennsylvania Hospital, just admitted, who gave the following history:—

Mrs. H. B., aged twenty-four, married, had, on February 10 while dining at a down town restaurant, eaten creamed chicken; in the midst of the meal she felt a violent, stabbing pain in the right side of the throat, and was unable to swallow thereafter because of the continuance of the pain. She was taken home to West Philadelphia, and a competent laryngologist in the neighborhood called, who inspected the pharynx, fauces and larynx, could see no foreign body and told her, as most of us would have done under the circumstances, that she had swallowed a sharp piece of chicken bone which had caught temporarily and then passed down, leaving the scratch which caused the dysphagia. And in this diagnosis he was probably nearly right. When, however, forty-eight hours passed, with the pain and the inability to swallow continuing, he sent her to the hospital for an esophageal examination.

When first seen by me, the neck was noticeably larger on the right side and very tender, the tenderness extending under the sternomastoid muscle, from the mastoid process nearly to the sternum and across the thyroid to the left side of the cartilage. The mouth was opened with difficulty on account of the pain caused; the tongue was brown, coated, furred and dry; the temperature was 102°, and the patient was considerably prostrated. We immediately had an *x*-ray picture taken, which was negative. As an esophagoscopy under local anesthesia was out of the question on account of the induration in the neck and the extreme tenderness there, she was etherized and the Jackson laryngeal speculum inserted. Location of the upper end of the esophagus was difficult because of the great inflammation and swelling that had taken place there, practically closing the lumen of the gullet. With patience, however, and avoidance of all unnecessary traumatism, a Jackson bronchoscope, without the obturator, passed the obstruction and thence went easily almost to the cardia. No foreign body was discovered, the lower part of the esophagus, below the level of the cricoid cartilege, being normal. On withdrawing the scope the walls were inspected with great care, and the inflamed and indurated portion was found to be about five centimeters in width. Moreover, at the lower edge of this portion, on the right side, were two hemorrhagic spots, with a small amount of blood exuding. The scope was withdrawn and repassed with ease and although there was some slight bleeding from the inflamed area, nothing further was discovered, and the patient was returned to bed after being on the table about fifty minutes. On the next day she could swallow slightly, the swelling and pain in the neck continued, the urine contained albumin and casts, the tongue continued coated, temperature 100°-102° and she said that a small amount of blood-streaked pus had been expectorated which, she felt, had come from the sore spot in the throat. Twenty-four hours after the esophagoscopy, she was again unable to swallow except with the greatest difficulty. On February 15 she was, at her request, removed to a private room at the Polyclinic Hospital, she having been put in the ward at the Pennsylvania on admission. By this time swallowing was again easier, the neck was slightly less tender but still much swollen, showing no fluctuation; tongue was dirty and breath foul. A small amount of pus was again expectorated, and the temperature remained the same. She complained of pain in the right abdomen and right lower chest and Dr. R. Max Goepp saw her with me, and I shall leave the further details of the case to him.

DR. GOEPP:

The patient came under my observation February 19, 1914, nine days after she had presumably swallowed the chicken bone which caused the perforation in the esophagus. The history up to that time was that she had suffered from general malaise, skin eruptions, and occasional swelling of the left ankle and left wrist. The lips had also been swollen at times. The eruption, described by the patient as resembling hives, occurred also over the site of an old burn. This urticarial eruption would appear suddenly on the entire surface of the body, and disappear again in a few hours. It was accompanied by moderate itching. For the past two days there had been profuse sweats.

The previous medical history contains nothing of interest except a severe attack of hives in childhood.

On admission to the Polyclinic Hospital, February 15, five days after the accident, the patient presented the above described urticarial eruption, and "swelling and tenderness of nearly all the joints in the body—shoulders, elbows, wrists, finger-joints, knees and ankles. There was slight dullness over the lower lobe of the right lung posteriorly, with diminution of tactile fremitus. Vocal resonance was normal all over the lung area. No adventitious sounds. Examination of the heart was entirely negative; no murmurs. Spleen and liver not enlarged." The temperature on admission was 103° and continued at this height for about thirty hours, when there was a sudden drop to 99°, followed by a recrudescence to 101°. Blood count: 3,830,000; 70 per cent. (Dare); 8600. The urine contained albumin and many hyaline casts, leukocytes and pus.

When the patient was first seen, February 19, the chief complaint was pain in the lower axillary region on the right side, which had come on suddenly about two hours before. The face was flushed; the lips and lower eyelids greatly swollen, the tongue coated and moist, protruded without difficulty. There was no dysphagia. The mouth could be opened and closed without difficulty. The tissues of the neck on the right side were swollen and indurated. The patient complained of moderate itching.

The front and back of the trunk and the four extremities were covered with an abundant urticarial eruption in large, white elevated patches—giant urticaria. The heart was normal; there were no murmurs.

Over the right chest, posteriorly, the breath sounds were diminished in intensity to the level of the mid-scapula, and absent below that point. There was slight dullness and diminution of vocal resonance over the right base and axilla. The temperature was 99.4°. The urine showed a heavy cloud of albumin and numerous hyaline casts and leukocytes. This albuminuria had been present three days. Leukocytes, 14,600; polymorphonuclears, 83 per cent.; lymphocytes, 11 per cent. Blood culture sterile.

The history of the case may be briefly summarized: Onset of fever and constitutional disturbance, with generalized arthritis and right-sided pleurisy, five days after the accident. The temperature, at first 103°, continued with remissions of septic type for nine days, and then remained normal or subnormal till the patient's discharge two weeks later. The arthritis subsided for a time after its first appearance, but on the eleventh day returned with increased severity for about three days, during which time the patient was rendered entirely helpless by the pain. It was accompanied by intense itching of the hands and feet. Pleurisy, with severe pain, but without effusion, was present from the fifth to the tenth day. Albuminuria was found on the seventh day and continued for nine days. Urticaria was present practically from the beginning and continued throughout the attack, the eruption lasting a few hours or an entire day at a time.

During the three days of the arthritis a daily hypodermoclysis of 600 cubic centimeters was given. The urine was reduced in quantity and heavily loaded with albumin, hyaline casts and leukocytes; but cleared up as the arthritis subsided. The urinary quantity increased markedly under the influence of hypodermoclysis, the specific gravity falling from 1.027 to 1.007, and this condition persisted until the patient's discharge.

The blood early showed the effects of the septic process. A leukocytosis of 14,600 was found at the height of the arthritis. Three days later the hemoglobin was 58 per cent.; the next day, 63 per cent., and the leukocytes 6200. March 2, six days after the arthritis subsided, the blood picture was practically normal again: 4,290,000; 75 per cent.· 10,400. Two days later the hemoglobin was 83 per cent. (Dare). During the nine days from February 22 to March 2, the patient received daily a hypodermic injection of iron citrate, three fourths of a grain, and manganese citrate, one twentieth of a grain, in a one half per cent. solution of quinin and urea hydrochlorid.

The dysphagia gradually subsided; the tissues of the neck regained their normal outline; the tenderness disappeared first from the left side of the thyroid, then from the right, and lastly from the deeper structures. Twelve days after the accident all local symptoms had disappeared. The patient was discharged, cured, March 10, after an illness of one month.

The interesting features of the case from the medical standpoint are the number of different septic manifestations—urticaria, pleurisy, nephritis, polyarthritis, and severe secondary anemia—the rapidity of their onset and equally rapid subsidence. The prostration during the height of the attacks, that is, during the period of severe arthritis, which was the prominent clinical feature of the case, was in proportion to the severity of the nephritis and the anemia, and for a time the prognosis was regarded as extremely doubtful. The recurring attacks of intense and generalized urticaria suggest an effort at elimination of the toxins, and were regarded as not altogether an unfavorable symptom. From the therapeutic viewpoint the gratifying effects on the urinary elimination of hypodermoclysis, and the rapid repair of the blood under hypodermic administration of iron are interesting.

DR. COATES:

Of course multitudes of foreign bodies have become lodged or impacted temporarily in the esophagus with results ranging from speedy recovery with the passage or removal of the offender, to death from rupture or perforation with peri-esophageal infection if in the upper part, or mediastinitis if in the lower. Such accidents from the swallowing of fish and chicken bones are by no means rare. This is well recognized by veterinarians and dog fanciers, who do not allow their charges to eat chicken bones because of the danger of splintering and resultant perforation. Since we did not find the actual splinter *in situ*, our diagnosis was not verified, but the fact of eating hashed chicken, the sharp stabbing pain, the two hemorrhagic spots looking like possible perforations, the indurated local infection on that side of the neck, with the history of pus afterwards, would seem to confirm the diagnosis. The physician first called in was right. The bone had not only scratched but pierced the thin esophageal wall and passed on, but left infection behind. A small peri-esophageal abscess later discharged back into the esophagus, but in the meanwhile the curious symptoms of general infection, which justify this paper, had supervened. After the withdrawal of the 'scope, for about twenty hours the patient was able to swallow, due to the stretching of the ring of induration at the mouth of the esophagus by the manipulations. This organ then became again swollen with a return of the dysphagia, which was again relieved by the discharge of the small abscess. Many cases of suppuration of the neck after the removal of foreign bodies have been reported, but a review of the literature for the last four years fails to find a case similar to the one presented in the respect of general infection with speedy recovery.

Jacques[1] states, apropos of sharp bones impacted in the esophagus, that the exploration should be most careful and that, even after removal, the prognosis should be most guarded and the patient watched carefully for signs of local or general infection.

Lerche[2] urges the immediate removal of all foreign bodies, especially sharp ones, to minimize the risk of perforation followed by mediastinitis, cervical abscess, perforation of the aorta or into the trachea or bronchi, and death; all of these sequelæ having been reported. He reports five cases of his own—two being fish bones, two, pieces of bone, and one, a safety pin. He collected from the literature of 1900-1911 200 cases of foreign bodies in the esophagus, of which 12.5 per cent. were fatal, 11.5 per cent. being due to perforation of the esophagus, and of the causes of these, splinters of bone were the most common.

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[1] Jacques: Suppurative Peri-esophagitis after Removal of Foreign Body, Rev. hebd. de Laryngol., Nov. 18, 1911.

[2] Lerche, Wm.: The Esophagoscope in Removing Foreign Bodies from the Esophagus, *Jour. A. M. A.*, March 4, 1911.

PROPAGANDA FOR REFORM.

Cystogen, Cystogen Aperient and Cystogen-Lithia. Cystogen is the therapeutically suggestive name applied to hexamethylenamin, by the Cystogen Chemical Company, St. Louis, Mo. By means of extravagant claims, unwarranted assertions and pseudoscientific arguments the Cystogen Chemical Company advises the use of cystogen aperient or cystogen-lithia or all three in a well-nigh endless number of diseases. The promoters take good care that every cystogen prescription is likely to spread the cystogen gospel among the people. In announcing the rejection of these products the Council on Pharmacy and Chemistry calls attention to the conservative discussion of hexamethylenamin which appears in its publication "Useful Drugs" (*Jour. A. M. A.*, Dec. 12, 1914, p. 2149).

Ergoapiol. Ergoapiol (Martin H. Smith Co., New York) is a mixture put up in capsules, each of which is said to contain apiol (Special M.H.S.) 5 gr., ergotin 1 gr., oil savin ½ gr., aloin ⅛ gr. Examination indicated that each capsule did not contain 5 gr. apiol but an oleoresin of parsley seed. The recommendations in the advertising matter invite its indiscriminate use. The Council on Pharmacy and Chemistry refused to recognize this unscientific mixture of ingredients which has widely differing therapeutic effects (*Jour. A. M. A.*, Dec. 12, 1914, p. 2149).

Apergols. Apergols, put out by H. K. Wampole Co., Inc., is apparently an inversion of the name Ergoapiol and the preparation appears to have essentially the same formula. In general the claims made for apergols are the same as those made for ergoapiol. The Council refused admission to apergols because they are advertised indirectly to the public, because of unwarranted therapeutic claims, because of the nondescriptive name and because the product is unscientific (*Jour. A. M. A.*, Dec. 12, 1914, p. 2149).

Iodalia. Iodalia (Geo. J. Wallau, Inc.) is claimed to be a valuable substitute for iodids. Examination in the A. M. A. Chemical Laboratory indicated that when administered it would act like ordinary iodids and that to obtain the equivalent of 20 grains potassium iodid it would be necessary to give the contents of a one dollar bottle of iodalia. Particularly reprehensible among the many unwarranted claims made is one which suggests to the public that iodalia will protect against infectious diseases. The Council voted that iodalia be refused recognition (*Jour. A. M. A.*, Dec. 12, 1914, p. 2149).

Nourry Wine. This wine, sold by E. Fougera and Co., is said to contain 12 per cent. alcohol and 1½ gr. iodin to the fluidounce in combination with tannin. Examination in the A. M. A. Chemical Laboratory showed that its action would be that of ordinary iodid and that the non-production of iodism is due to the small amount of iodin it contains. Claims are made which are prone to lead to its use both by the profession and the public in conditions in which effective medication is called for. The Council on Pharmacy and Chemistry refused recognition to Nourry Wine (*Jour. A. M. A.*, Dec. 12, 1914, p. 2150).

Warner's Safe Remedy. "Warner's safe remedy for the kidneys and liver and Bright's disease" is reported by the A. M. A. Chemical Laboratory to contain alcohol, by volume, 14.40 per cent., glycerin, by weight, 7.72 per cent., potassium nitrate 1.75 per cent. and vegetable extractives. This preparation consists essentially of alcohol and potassium nitrate. Alcohol is contraindicated in inflammatory diseases of the kidneys and potassium nitrate is a kidney irritant. Sufferers from kidney diseases who take Warner's safe remedy will shorten their lives (*Jour. A. M. A.*, Dec. 19, 1914, p. 2246).

Intestinal Antiseptic W-A. The Abbott Alkaloidal Company advertises intestinal antiseptic W-A as " . . . a scientifically blended and physiologically adjusted mixture, of the pure sulphocarbolates of calcium, sodium and zinc, grs. 5, with bismuth subsalicylate, gr. 1-4 and aromatics." The Council on Pharmacy and Chemistry refused recognition to this proprietary because the formula does not indicate the proportionate amounts of the several sulphocarbolates, because the name is therapeutically suggestive and an invitation for the use of the preparation by the public and because exaggerated therapeutic claims are made for it. The claims which are made are most extreme; they contrast sharply with the low esteem in which the phenolsulphonates (sulphocarbolates) are generally held. It does not appear that the claims have been substantiated by proper evidence (*Jour. A. M. A.*, Dec. 19, 1914, p. 2247).

Keller's Tuberculin Test Plate. This appears to be an attempt to exploit the Moro tuberculin ointment. The test does not discriminate between active and latent tuberculosis. As most adult persons have experienced tubercular infection at some time in life, a large majority of persons will respond positively to the test (*Jour. A. M. A.*, Dec. 19, 1914, p. 2250).

Stomach Bitters. Experiments conducted by A. J. Carlson and his coworkers at the University of Chicago show that the widespread use of bitter drugs as a means of stimulating the appetite or aiding digestion is a therapeutic fallacy. He finds that such drugs as gentian, quassia, calumba, hops, condurango and the elixir of quinin, strychnin, and iron do not increase hunger contractions of the stomach and the related phenomenon nor induce increased secretion of hydrochloric acid or pepsin (*Jour. A. M. A.*, Jan. 2, 1915, p. 58).

Bannerman's Intravenous Solution. This solution was refused recognition by the Council on Pharmacy and Chemistry because vague, indefinite and misleading statements were made regarding its composition, because it was recommended for anemia, tuberculosis and syphilis under grossly exaggerated and unwarranted claims and because the intravenous injection of complex and indefinite mixtures is unscientific and dangerous. The proprietors having submitted to the Council a revised statement of composition and a revised advertising circular, Bannerman's intravenous solution was again refused recognition, partly because the statement of composition was unsatisfactory but mainly because of the unscientific character of the solution and the unwarranted therapeutic claims which are made for it (*Jour. A. M. A.*, Jan. 2, 1915, p. 70).

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Athens, May, 1915.

ABDOMINAL PAIN.

Within a few years we have entered a new era in our conception of the causes and significance of abdominal pain. In the present issue of the Journal, an able paper by Dr. J. B. Deaver deals with this subject in a very thorough way. The surgeons are positive that there is an organic basis for all of these pains, which are chronic, and have taken chronic dyspepsia from the realm of internal medicine and put it into their own hands for permanent relief. Internists have been slow to admit this and unfortunately some still cling to the idea that the most of these pains are functional.

The history of the treatment of gall-bladder disease is being duplicated by that of gastric and duodenal ulcers. Few internists to-day deceive themselves into believing that the administration of a pint of olive oil will cause the expulsion of gallstones. They are rather considering the dangers of cancer of the gall bladder and of chronic pancreatitis, as the result of the continued presence of gallstones, and are advising surgical interference. In peptic ulcers the dangers of perforation and, in the case of the gastric variety, the danger of consequent cancer, are surely but positively turning the minds of internists to the consideration of surgery for the purpose of permanent relief.

While our clearer conception of these disorders has been due to the surgeons, the burden of their diagnosis must usually rest in the hands of the family physician and internist.

Many times the pain is characteristic and the diagnosis easy: but perhaps in the most cases it is not. It is true that there are in all some high points which will serve to direct us toward the right way; but it is in a careful and painstaking history that chief reliance must be put in order to arrive at a positive diagnosis. This may be complicated by the involvement of more than one organ, as the appendix and the duodenum or the right ovary and the appendix. It may be confused by the divers pains due to adhesions which have followed repeated acute attacks. Therefore a careful examination and study of all cases of abdominal pain is called for, with a full understanding that chronic pain means organic disturbance. It occasionally happens however that no certain diagnosis can be made and it is only inspection of the exposed viscera, as Dr. Deaver says, which will reveal the true cause.

Granted, as it must be, that these chronic pains have an organic disease as their cause, the questions arise as to which of them must be operated upon; which of them are safe to leave alone; which of them promise better results if treated with diet, careful living and medicine, than with operation. In some the danger of the future is so positive, that there can be no question that it is better to operate early, at a selected time, than to wait. In many however, the physician is prone to agree with the patient that it is "better to bear the ills we have than fly to others we know not of." For instance, the operations offered for the relief of chronic duodenal ulcer are not entirely satisfactory; gastroenterostomy is not an unmixed blessing. It is refreshing to know that one surgeon takes a more or less conservative view of surgical measures for the relief of these pains. That "we have had and are having a gastroenterostomy plague" seems certain and that too much blame is being put upon adhesions and membranes, seems probable. J.

PERMANENT HOMES FOR COUNTY SOCIETIES.

Dr. Tyson in his address before the Berks County Medical Society (see page 599) said, "It is with a medical society as with a family, or business, it is impossible to conduct its affairs satisfactorily without a permanent home, and the success with which these affairs are conducted depends largely on the stability, the convenience and the dignity of such an abode."

The Harrisburg Academy of Medicine erected a two-story brick building in 1895 at a cost of $8000, contributed by its members. This building is used as the common home of the Academy and of the Dauphin County Medical Society. The close relationship between the two societies is shown by the fact that only members of a county medical society are eligible to membership in the Academy. The Academy has a good library, a reading room and its annual dues are $7.50. The annual dues of the county society are $3.00.

The Berks County Medical Society, April 13, took formal possession of the building it has occupied for some two years. (See County Society Reports.) The building, it is understood, cost about $25,000 and there is an obligation of $2000 that has been assumed by the society, in addition to an unpaid subscription list of $650. The first floor is used by the society for meeting and reception rooms and library. The second and third floors are rented to the University Club. In an adjoining wing there is a care-taker's family, which looks after the entire building. The Nurses' Registration Bureau is also in the building and the head of this bureau acts as librarian. The dues of this society are $3.00.

The Erie County Medical Society meets in the Public Library Building and has a good library of its own. The dues of this society are $7.00.

The Lackawanna County Society occupies rented rooms and has a good library and reading room. The society is considering the matter of erecting a home of its own. The annual dues are $10.00.

The Lawrence County Medical Society rents a large room in New Castle at $10.00 per month and sub-rents to the Board of Trade at $5.00. They have furnished the room quite comfortably and have a small library. The dues in the Lawrence County Society are $5.00.

The Luzerne County Society is now occupying its own building though it is not quite complete. The building and lot cost $30,000. There is a mortgage of $10,000 against the property, but it is expected that the annual income from rentals will amount to some $1800. The society has maintained a good library and reading room for a number of years, renting fairly satisfactory rooms, but is now much more comfortably situated in its own commodious building. The dues in this society are $10.00.

Washington County Medical Society rents the third floor of a centrally located building in Washington. The members have keys and come and go at their pleasure. Dues are $5.00. Most of the other societies meet at hospitals, hotels, courthouses or other public places. Some have libraries and doubtless some have their own rented rooms but data is not at hand for particulars.

The Committee on Permanent Home for the Philadelphia County Society has secured an option on property on the southeast corner of Nineteenth and Chestnut Sts., for $425,000. At the meeting of the society, April 21, a preliminary report was received and it was decided to engage a paid agent to canvass for subscriptions and rentals. (See Bulletin Excerpts.) The personnel and enthusiasm of the members of the committee assure final success of the project. The committee well says, "Surely, in a matter that means so much to the future life, development and progress of the Philadelphia County Medical Society, as well as to the medical profession of Philadelphia, there should be no lack of either zeal or material aid, in order that the aims and hopes of this great and influential body may be speedily realized."

The Journal suggests that some of our members, both residents and nonresidents of Philadelphia, subscribe for the common stock bearing six per cent. interest (see proposed financial plan) and convey the same at once or at the death of the holder to the Medical Society of the State of Pennsylvania, the income to be used for the benefit of the Medical Benevolence Fund, the Medical Defence Fund, the Pennsylvania Medical Journal, or for some prize essay. In this way members and their friends can encourage and assist the Philadelphia County Medical Society in erecting a permanent home, which will afford suitable meeting places for both large and small medical gatherings under the auspices of the county and state societies, and at the same time establish endowments for the state society. Success to the committee, to the society, and to the profession. S.

THE PROFESSION AND THE LAITY.

Dr. Tyson, in his address printed in this issue, calls attention to the fact that "the relations between the medical profession and the laity are not close enough." This fact is perhaps most evident to those who have at one time or another attempted to influence public opinion in the interest of some legislation affecting public health or preventive medicine. Our county societies should hold one or more public meetings each year with suitable topics and judicious speakers. There should be no objection to inviting prominent individuals to attend the regular meetings of our societies now and then when the programs are of a more or less public nature, and when there can be no just charge that such invitations are intended to bring the speakers into undue prominence. Most of our societies will have a cancer program for June, and some of the meetings will be of such a nature that it will be thought wise to invite teachers, club women and prominent men and women. S.

PROGRAM FOR THE SEPTEMBER SESSION.

The Committee on Scientific Work held its final meeting in Pittsburgh, May 11, and completed the program for the Philadelphia Session. Inasmuch as the chairman and five of the committee are the same as for last year, it may be permissible to express the opinion that the program as finally arranged is thought to be even better than that of the Pittsburgh Session. The solicitations for papers have met with such hearty response that it was necessary to decline even some of those solicited, though there was accepted the full number of volunteer paper at first requested. Everything now indicates the largest and best meeting in Philadelphia that the society has ever had. S.

ROENTGENOGRAMS AT PHILADELPHIA.

Physicians wishing to exhibit roentgenograms at the Philadelphia Session in September will communicate with Dr. Russell H. Boggs, Empire Building, Pittsburgh; Dr. John Wesley Ellenberger, 922 North Third St., Harrisburg; or Dr. W. S. Newcomet, 3501 Baring St., Philadelphia. Members unable to attend the meeting may send their plates or prints to Dr. W. S. Newcomet, the expense and risk to be assumed by the owner. A description of the exhibit should be sent in advance.

J. T. R.

BICHLORID POISONING A CENTURY AGO.

Now that bichlorid is a fashionble poison an abstract from a clinical report one hundred years ago will be of interest. Dr. Charles Thomas relates his experience with a case in the *Edinburgh Journal* in 1820.

His patient, a lady thirty years old, was delivered of her fifth child on January 15, 1815. She had for some time been using a solution of corrosive sublimate applied locally to a skin rash. While still convalescing from her delivery her nurse gave her a quantity of this solution containing about thirty grains by mistake for a regular draught. The patient was immediately seized with violent abdominal pain. Dr. Thomas was near by and reached the patient about two minutes after the accident. He had fortunately just been reading in Rees' Cyclopedia of Mineral Poisons that liver of sulphur was the best antidote for mercury, so he "ran himself a considerable distance to call the surgeon principally to mention this remedy to him." Just why the surgeon should have had this substance on hand instead of a medical man we do not know. Fortunately, however, he did have it and both returned, reaching their patient about forty-five minutes later. Liver of sulphur in large quantities, ipecac and other emetics were freely administered. Copious vomiting followed and soon the patient had violent spasms, one spasm attacking the right breast "which became much contracted and its milk speedily dried up." The patient was then seized with numerous alarming attacks of faintness. "Ether was administered and removed this symptom entirely." For two days and one night the patient was much exhausted and continued to vomit frequently. Through the second night she had frightful dreams and perhaps the most astonishing incident of the case is that during the second night she "began to think unfavorably of her situation which had not been the case before. She was hurried in her sleep and fancied that a horridly looking figure was at her bedside presenting a bottle to her." Fortunately after this time the lady made a good recovery and her physician mentions having confined her later with no unusual events.

J. M. W.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the April JOURNAL was printed:—

ALLEGHENY COUNTY: *Removal*—Edward Y. Ord from West Elizabeth to 1112 South Union Ave., McKeesport.

BERKS COUNTY: *New Member*—Robert W. Lenker, West Leesport (by transfer from Schuylkill County).

BLAIR COUNTY: *New Members*—George E. Baker, Williamsburg; John H. Galbraith, Emory H. Morrow, Sarah M. Davies, Altoona.

CHESTER COUNTY: *Removal*—Chester A. Witmer from West Chester to Waycross, Ga.

CLINTON COUNTY: *New Member*—Francis P. Dwyer, Renovo.

DAUPHIN COUNTY: *New Members*—Leon K. Graber, Samuel F. Hassler, Harrisburg; John J. Mullowney, Paxtang (by transfer from Philadelphia County Society).

DELAWARE COUNTY: *Removal*—Ernest T. Williams from Media to Exchange (Montour Co.).

FAYETTE COUNTY: *New Members*—George H. Edmunds, James L. Junk, Connellsville; Marion H. Powers, Point Marion.

LANCASTER COUNTY: *New Member*—I. Harry Pickel, Millersville. *No Longer a Member*—Donald McCaskey.

LAWRENCE COUNTY: *New Members*—Herman D. Boyles, Jesse D. Moore, New Castle; C. S. McGeorge, Enon Valley.

LEHIGH COUNTY: *Removal*—Otto C. Rieche from Chicago, Ill., to Seager Bldg., Hazleton (Luzerne Co.).

LUZERNE COUNTY: *New Members*—James P. Gilligan, Wilkes-Barre; Lewis Leonidas Rogers, Sr., Kingston.

LYCOMING COUNTY: *New Members*—Howard M. Essick, Essick Heights; Charles G. Hayes, Montoursville.

NORTHAMPTON COUNTY: *New Member*—Jacob Y. Salzman, South Bethlehem. *Removal*—Frank L. Baum from Nazareth to Athol (Berks Co.).

NORTHUMBERLAND COUNTY: *New Member*—Thomas J. Tiffany, Pillow (Dauphin Co.).

PHILADELPHIA COUNTY: *New Members*—Frederick S. Baldi, George S. Crampton, Winslow Drummond, Samuel W. Gadd, Ellis E. W. Given, Charles L. Hawkins, James W. McMonagle, Ernest L. Maier, A. Rutherford Renninger, Philadelphia; Lucius W. Johnson, % Navy Department, Washington, D. C. *Transfer*—John J. Mullowney to Dauphin County Society. *Removals*—J. Robbins Bean from Ashbourne (Montgomery Co.) to % State Board of Health, Jacksonville, Fla.; Frank G. Bishop from Philadelphia to Ebensburg (Cambria Co.); Francis M. Schilling from Philadelphia to P.O. Box 662, Johnstown (Cambria Co.).

SCHUYLKILL COUNTY: *Transfer*—Robert W. Lenker to Berks County Society.

SNYDER COUNTY: *New Member*—E. W. Tool, Selins Grove.

VENANGO COUNTY: *New Member*—Henry P. Hammond, Franklin.

WASHINGTON COUNTY: *New Members*—Audley O. Hindman, Cross Creek; Alfred R. Shuster, Finleyville; Albert Stilley Sickman, Lock No. 4; James E. Wilson, Langeloth.

WESTMORELAND COUNTY: *New Member*—John D. Greaves, New Alexandria.

STATE NEWS ITEMS.

MARRIED.

Dr. John Charles Gallagher and Miss Ella Marie Franey, both of Shenandoah, April 6.

Dr. John Patrick Chapman and Miss Mary Justina Huff, both of Philadelphia, March 19.

Dr. William J. Ryan and Miss Mary McCrudden, both of Philadelphia, April 15.

Dr. John Stewart Rodman, Philadelphia, and Miss Eunice B. Hinman, Summit, N. J., April 10.

Dr. Delbert Melroy Hess, Rohrsburg, and Miss Nellie Maude Keller, Fowlersville, at Bloomsburg, April 6.

Dr. Louis Theodore de M. Sajous, Philadelphia, and Miss Jessie Porter, Bowling Green, Ky., April 21.

DIED.

Dr. William H. Bunn (Univ. of Pennsylvania, '61) in Philadelphia, April 1.

Dr. Harry B. Brusstar (Jefferson Med. Coll., '73) in Philadelphia, April 25, aged 65.

Dr. David B. McIntire (Univ. of Pennsylvania, '05) in Pittsburgh, April 20, aged 34.

Dr Fred H. Klaer (Univ. of Pennsylvania, '04) in Philadelphia, February 27, aged 36.

Dr. Isaac Welsh Brown (Univ. of Pennsylvania, '07) in Philadelphia, recently, aged 32.

Dr. John H. Williams (Jefferson Med. Coll., '93) in Philadelphia, March 15, aged 44.

Dr. Michael Coyle Drennan (Univ of Pennsylvania, '63) in Easton, March 23, aged 76.

Dr. Justin C. Elliott (Univ. of Buffalo, '51) of New Brighton, in Ardmore, April 8, aged 87.

Dr. Marmaduke Allen Wood (Univ. of Pennsylvania, '74) in Philadelphia, April 28, aged 65.

Dr. Walter Ure (Coll. of Phys. and Surg., New York City, '66) in Pittsburgh, April 16, aged 82.

Dr. Theodore T. Tate (Pennsylvania Med. Coll., Gettysburg, '55) in Gettysburg, March 20, aged 84.

Dr. William R. Stavely (Jefferson Med. Coll., '55) in Lahaska, March 29, from senile debility, aged 83.

Dr. William Brooks Bigler (Jefferson Med. Coll., '65) in Dallastown, April 1, from senile debility, aged 81.

Dr. Thomas Shriner (Jefferson Med. Coll., '69) in Philadelphia, recently, from heart disease, aged 72.

Dr. William Rauch (Eclectic Med. Inst., Cincinnati, O., '82) in Johnstown, April 19, from nephritis, aged 55.

Dr. George Davidson Carl (Pennsylvania Med. Coll., Gettysburg, '55) in Greencastle, March 5, aged 84.

Dr. Landreth W. Thompson (Hahnemann Med. Coll., Philadelphia, '87) in Philadelphia, March 31, aged 51.

Dr. Oliver H. Getty (Univ. of Maryland, Baltimore, '78) in Meyersdale, March 14, from cerebral hemorrhage, aged 59.

Dr. Albert Z. Buchen (Coll. of Phys. and Surg., Baltimore, '76) in Hanover, March 24, from pleuropneumonia, aged 64.

Dr. Howard Lowrie Baird (Pulte Medical Coll., Cincinnati, '89) of Pittsburgh, in Los Angeles, Cal., March 12, aged 70.

Dr. William C. Crooks (Univ. of Pennsylvania, '66) in Philadelphia, March 14, as a result of an apoplectic seizure, aged 65.

Dr. John Calvin Cotton (Cleveland Med. Coll., '53) in Germantown, Philadelphia, March 10, from cerebral hemorrhage, aged 86.

Dr. Walter Montgomery James (Homeopathic Med. Coll. of Pennsylvania, Philadelphia, '69) in Philadelphia, February 24, aged 65.

Dr. Alonzo Porter Bowie (Philadelphia Univ. of Med. and Surg., '68) in Pittsburgh, April 15, from a nervous breakdown, aged 68.

Dr. William McWilliams (license, Westmoreland County, Pa., twenty years practice, '69) in Merwin, April 17, from senile debility, aged 93.

Dr. Gordon Beriah Hotchkin (Univ. of Pennsylvania, '55) in Altoona, March 12, one week after a fall in which he sustained a fracture of the hip, aged 81.

Dr. Robert Robinson (Long Island Coll., Brooklyn, 66) for many years a practitioner of East Brady, in Medina, O., April 4, from diabetes, aged 75.

Dr. Josiah E. Bauman (Bellevue Hosp. Med. Coll., New York, '67) of Telford, was struck by a train and fatally wounded at Souderton, April 29, aged 70.

Dr. Annie W. Stauffer (Eclectic Med. Coll. of the City of New York, '81) in Philadelphia, March 3, two weeks after a fall in which she broke her leg, aged 70.

Dr. Homer V. Oldfield (Homeopathic Med. Coll., St. Louis, '80) a retired practitioner of Philadelphia, was struck by a trolley car, April 15, sustaining injuries from which he died a short time later, aged 65.

ITEMS.

The General Hospital of Monroe County, East Stroudsburg, was opened May 1.

Howard Hospital, Philadelphia, is bequeathed $2500 by the will of the late Edward Smith Kelly.

Jefferson Medical College has promised to establish a hospital in France with one thousand beds.

Dr. Michael Austin, Reading, was on March 15, convicted in court at Reading of criminal malpractice.

Dr. Victor M. Reynolds, Derby, has been appointed instructor in pediatrics at Jefferson Medical College.

The Bureau of Medical Education and Licensure will hold examinations in Philadelphia and Pittsburgh, beginning June 1.

Dr. John C. DaCosta was the guest of honor at the annual banquet of the Northern Medical Society, Hotel Walton, April 27.

The University of Pennsylvania receives $10,000 and the Easton Hospital, $5000, by the will of the late Admiral C. Drennen, Easton.

The University of Pennsylvania, outpatient department, is bequeathed $1000 by the will of the late Matthias B. Colton, Philadelphia.

Chestnut Hill Hospital is bequeathed $5000, and the Children's Hospital, $1000, by the will of the late Edward Dale Toland, Philadelphia.

St. Timothy's Hospital and the Episcopal Hospital, Philadelphia, each received the sum of $1000 by the will of the late Dr. James L. Bromley.

Dr. John A. Lichty, Pittsburgh, has been appointed a commissioner of the State Board of Public Charities in place of Dr. Cyrus B. Laing, resigned.

Dr. Edward W. Ryan, Scranton, after directing the American Red Cross fight against typhus fever near Belgrade, Servia, has been stricken with the disease.

Dr. Clarence P. Franklin has been elected ophthalmologist to the Stetson Hospital, and Dr. Harold P. Goldberg ophthalmologist to the Episcopal Hospital.

St. Mary's Hospital, Philadelphia, laid the corner stone for its new building, April 25. The structure will be thoroughly fireproof and complete in every detail.

Dr. William M. Beach, Pittsburgh, addressed the West Virginia State Medical Association, at its annual meeting in Huntingdon, this month, on "Intestinal Reflexes."

Dr. David L. Edsall delivered the annual address of the Pathological Society of Philadelphia, April 22, at the College of Physicians, his address being "Bearings of Industry upon Medicine."

Dr. William F. Muhlenburg, Reading, was on April 30 chosen president by the executive committee of the Pennsylvania German Society to fill the unexpired term of the late William U. Hensel.

Dr. Albert R. Bickstein, Philadelphia, was sent to the Eastern Penitentiary by Judge Hall for not less than one year nor more than three years, upon his conviction of performing an illegal operation.

The Jefferson Hospital Clinical Society, on March 19, elected the following officers for the ensuing years: President, Dr. John M. Fisher; vice president, Dr. E. J. G. Beardsley; secretary, Dr. Erwin D. Funk; treasurer, Dr. Clarence D. Smith.

Dr. Walter Lathrop, who has returned to his duties as superintendent of the State Hospital at Hazleton, after an operation, was the guest of honor at the annual spring banquet of the Hazleton physicians, April 29.

The Philadelphia Obstetrical Society entertained the New York Obstetrical Society April 1st. The meeting which was held at Hotel Rittenhouse was preceded by a series of clinics on obstetrics and gynecology by the Philadelphia members.

The Samuel D. Gross Prize of the Philadelphia Academy of Medicine for the year 1915, amounting to $1500, was awarded to Dr. John Lawrence Yates, Milwaukee, Wis., for his essay entitled "Surgery in the Treatment of Hodgkin's Disease."

Dr. E. S. Dorworth, Bellefonte, who recently completed fifty years of the practice of medicine in Center County and also celebrated his eighty-first birthday anniversary, was accorded an informal reception and dinner at the Brockerhoff House by the Center County Medical Society.

Wassermann Tests Free. On April 2 Dr. Samuel G. Dixon, state health commissioner, notified the physicians of Pennsylvania that the State Department of Health laboratories would make the Wassermann test on request. Special containers will be furnished the physicians without charge on request.

Dr. Ira L. Darling, Warren, Pennsylvania, and Dr. Philip B. Newcomb, Osawatomie, Kansas, will have a paper on "The Correlation of Clinical and Serological Findings in Paresis and Cerebrospinal Syphilis," at the forty-ninth annual convention of the Kansas Medical Society, Kansas City, May 5 and 6.

Hahnemann Hospital, Philadelphia, is bequeathed $5000 by the will of the late Elizabeth S. Scattergood, for the endowment of a bed in the children's ward, as a memorial to Mary Phipps Scattergood, and $5000 to endow two beds in the women's medical and men's medical wards respectively.

Allegheny County Medical Society Celebrates Semicentennial of Society. The fiftieth anniversary of the Allegheny County Medical Society was celebrated on April 20, the morning being given to clinics at the various Pittsburgh Hospitals, and the afternoon to a formal meeting with addresses followed by a symposium on "Internal Stasis." The Journal for June will give the full proceedings.

Fraternity among Physicians. The Clearfield County Medical Society at its March meeting after thorough discussion passed the following: Resolved that we, the members of the Clearfield County Medical Society will stand together as a unit and in the event of illness whereby a member is incapacitated from duty that we will do his work for him gratuitously until he recovers.

American Ambulance Hospital at Paris. Drs. J. William White, James P. Hutchinson, Daniel J. McCarthy, Edmund B. Piper, Walter Estell Lee, Arthur E. Billings, Peter McCall Keating, and Samuel Goldschmidt, with a number of nurses will leave in June with a complete University unit to serve in Paris during July, August and September. Although none will be salaried, the cost of transportation to and from Paris, of necessary supplies, and other expenses that may arise, will aggregate about $10,000. A number of subscriptions, ranging from $50 to $1000, already have been received for the fund by the treasurer, Mr. Edward B. Smith.

Physicians Urged to Join Philadelphia Chamber of Commerce. A campaign to enlist physicians in the Greater Chamber of Commerce is headed by a committee consisting of Drs. James C. Wilson, E. E. Montgomery, William A. Pearson, W. M. L. Coplin, I. P. Strittmatter, S. Lewis Ziegler, Jay F. Schamberg, L. Webster Fox, Seneca Egbert, Charles H. Frazier, George E. Pfahler, Francis D. Patterson, R. N. Downs, Jr., C. A. E. Codman and James M. Anders, chairman. "Professional men need the new Chamber of Commerce just as much as the Chamber needs them. Physicians for example can exert through the Chamber a greater influence than ever before in those matters that directly concern their interests as general practitioners and as members of medical institutions in Philadelphia. Heretofore they have failed to exert that influence to which they are entitled because they have lacked a strong central organization through which to act."

GENERAL NEWS ITEMS.

The American Pediatric Society holds its 1915 meeting at Lakewood, N. J., May 24-26.

The Seventh Pan-American Medical Congress will meet in San Francisco, Calif., June 16 to 21.

Prof. Friedrich Loeffler, the German scientist, who in 1884 discovered the diphtheria bacillus, died April 9, in Berlin, aged 63.

Wellesley College Girls have contributed $800 for the purchase of an automobile ambulance for the American Ambulance Hospital.

The Medical Review of Reviews for May is a Woman's Number, all the articles contributed being from the pens of women physicians.

The American Proctologic Society will hold its seventeenth annual meeting in Civic Auditorium, San Francisco, Calif., June 21 and 22.

The American Academy of Medicine will hold its fortieth annual meeting in Auditorium Hall, San Francisco, Calif., June 18, 19, 20 and 21.

Sir George Turner died at Colyton, Devon, March 12, of leprosy which he contracted in South Africa while studying the disease. He was knighted in recognition of this work.

The New York Polyclinic Medical School recently received an endowment of $50,000 by the will of the late Mrs. Mary Anna Palmer Draper, and $10,000 as a gift from a member of the Board of Trustees of the institution.

Red Cross Surgeons Sail. Five Red Cross surgeons and twenty-four nurses sailed for Europe, April 17, on the American Liner St. Louis, which carried also a large consignment of hospital supplies, including two complete field hospitals.

The American Society for Physicians Study Travels has arranged an itinerary which will leave Philadelphia and Pittsburgh, June 6 and reach San Francisco June 20. Travel arrangements made by Althouse Tours Company, 1333 Walnut St., Philadelphia.

The Warren Triennial Prize. The subject for competition for the year 1916 is on Some Special Subject in Physiology, Surgery or Pathology, written in English, French or German. Dissertations will be received until April 14, 1916. The prize will amount to $500. Frederick A. Washburn, M. D., Massachusetts General Hospital, Boston, Mass.

Dedication at St. Louis. Three new buildings of the Medical School of Washington University were dedicated April 29. Dean William Pepper and Provost Edward Fahs Smith, of the University of Pennsylvania; Dr. William L. Rodman, and Dr. Richard H. Harte, Philadelphia, and Dean Thomas Shaw Arbuthnot of the University of Pittsburgh, were present by invitation.

Council on Pharmacy and Chemistry. During March and April the following articles have been accepted for inclusion in New and Nonofficial Remedies: Standard radium solution for bathing, standard radium solution for drinking, standard radium earth, standard radium compress, Radium Chemical Company; erosol pro capillis, Knoll and Company. The lactobacilline preparations (The Franco-American Ferment Company) now being advertised direct to the public, the Council has voted that their acceptance be rescinded and that these products be omitted from New and Nonofficial Remedies. A report explaining this action has been authorized for publication.

The American Social Hygiene Association has been offered a prize of $1000 by The Metropolitan Life Insurance Company to be awarded to the author of the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the Association. Competition for this prize is open to all. The Metropolitan Life Insurance Company desires to use the winning pamphlet among its industrial policy holders. Manuscripts should not exceed 3500 words and must be in English and must not have been previously published. The winning manuscript, in consideration of the award of $1000, becomes the property of the donor of the prize, all rights therein being surrendered by the author. The right to purchase any manuscript submitted, at the rate of 5c a word, is received by the Metropolitan Life Insurance Company and by The American Social Hygiene Association. Address manuscripts and requests for further information to The American Social Hygiene Association, 105 W. 40th St., New York City.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian profession up to and including the week ending May 8, 1915.

Contributions:—

Receipts previously reported	$4611.50
Dr. Frank Slopanskey, Helper, Utah,	5.00
McKees Rocks Medical Society, McKees Rocks	6.50
Dr. James M. Anders, Philadelphia,	15.00
Dr. Charles M. Green, Boston, Mass.,	25.00
Dr. J. M. Miller, Hickory,	5.00
Dr. John Woodman, New York, N. Y.,	10.00
Dr. R. L. Bradley, Roswell, New Mexico,	5.00
Dr. Everett D. Peek, Thompson Falls, Mont.,	25.00
Dr. Charles L. Minor, Asheville, N. C.,	15.00
J. M. H., Ft. Logan H. Rocts, Ark.,	5.00
Dr. Fred E. Thompson, Detroit, Mich.,	25.00
Dr. Alfred H. Tickell, Nevada City, Cal.,	2.00
Dr. Z. H. McClanahan, Colorado Springs, Colo.,	5.00
Dr. C. Dunbar Roy, Atlanta, Ga.,	5.00
Hempstead Academy of Medicine, Portsmouth, Ohio,	10.00
Dr. Halsey Beach Loder, Boston, Mass.,	5.00
Dr. and Mrs. Jas. R. Judd, Honolulu, Hawaii,	25.00
Dr. Hugh T. Patrick, Chicago, Ill.,	25.00
Sebastian Co. Med. Society, Fort Smith, Ark.	15.00
Dr. F. W. Johnson, Boston, Mass.,	25.00
Dr. E. P. Quain, Bismarck, N. D.,	10.00
Dr. N. O. Ramstad, Bismarck, N. D.,	10.00
Dr. Haven Emerson, New York, N. Y.,	15.00
Dr. Edward B. Angell, Rochester, N. Y.,	10.00
Dr. T. A. Davis, Chicago, Ill.,	25.00
New Bedford Medical Society, New Bedford, Mass.,	50.00
Dr. Newton B. Waller, New York, N. Y.,	5.00
Dr. Charles G. Eicher, McKees Rocks,	5.00
Dr. William H. Perry, Sterling, Ill.,	5.00
Dr. Frederick A. Spafford, Flandreau, S. D.,	10.00
Dr. George L. Johnson, Newfolden, Minn.,	1.00
Salt Lake Co. Med. Soc., Salt Lake City, Utah,	100.50
Dr. and Mrs. Clem D. McCoy, Kenton, Ohio,	50.00
Dr. E. A. Weiss, Pittsburgh,	10.00
Dr. Hubert Claytor, Hopkins, S. C.,	5.00
Dr. C. E. Goodman, Virginia, Minn.,	5.00
Tri-County Medical Society, Copiah-Lincoln-Pike Counties, Miss.,	10.00
Dr. Harold W. Dana, Boston, Mass.,	25.00
Dr. H. N. Torrey, Detroit, Mich.,	10.00
Faulkner County Medical Society, Conway, Arkansas,	25.00
Newburyport Med. Club, Newburyport, Mass.,	20.00
Lieut. Col. F. P. Reynolds, M.C., U.S.A., Honolulu, H. T.,	25.00
Dr. Waldo Richardson, Seattle, Wash.,	5.00
Mrs. O. W. Johnson, Racine, Wis.,	5.00
Dr. Joseph Brettauer, New York, N. Y.,	25.00
Dr. Lewis Gregory Cole, New York, N. Y.,	25.00
Dr. J. N. Hall, Denver, Colo.,	5.00
Dr. J. B. Rogers, Independence, Iowa,	5.00
Medical Society of the Co. of Westchester, White Plains, N. Y.,	25.00
Dr. Alex. Marcy, Jr., Riverton, N. J.,	10.00
Dr. S. R. Woodruff, Bayonne, N. J.,	5.00
Dr. G. C. McMaster, Pittsburgh,	5.00
Dr. Charles G. Mixter, Boston, Mass.,	10.00
Dr. S. G. Laws, Spartanburg, S. C.,	5.00
American Surgeons Clinical Tour of 1914, Galesburg, Ill.,	150.75
Colorado Chapter of A.M.P.O. Medical Fraternity, Denver, Colo.,	50.00
Boston Society of Psychiatry and Neurology, Boston, Mass.,	100.00
Routt County Medical Society, Steamboat Springs, Colo.,	10.00
Dr. Bertram M. Bernheim, Baltimore, Md.,	10.00
Dr. John Lewis Stevens, Mansfield, Ohio,	5.00
Hoquiam Surgical Club, Hoquiam, Wash.,	10.00
Dr. J. D. Griffith, Kansas City, Mo.,	5.00
Dr. Philip F. Williams, Philadelphia,	5.00
Visiting Nurse Assn. of Chicago, Chicago,	12.00
Dr. Burnley Lankford, Norfolk, Va.,	5.00
Dr. Irene M. Morse, Clinton, Mass.,	3.00
The Homochitto Valley Medical Society, Natchez, Miss.,	14.25

Dr. T. L. Macdonald, Washington, D. C.,	10.00
The Yanktown District Medical Society, Yankton, S. D.,	50.00
Dr. James D. Voorhees, New York, N. Y.,	25.00
The Cooke County Medical Society, Gainesville, Texas,	15.00
The Sedgwick County Medical Society, Wichita, Kansas,	25.00
Dr. Carl B. Davis, Chicago, Ill.,	10.00
Dr. R. C. Dorr, Batesville, Ark.,	5.00
Anonymous "J", New York, N. Y.,	5.00
Dr. George Leonard Schadt, Springfield, Mass.,	5.00
Dr. Mark T. Goldstine, Chicago, Ill.,	10.00
Dr. Lomax Gwathmey, Norfolk, Va.,	25.00
Dr. J. C. Chipman, Sterling, Colo.,	5.00
Miss Grace Hutchison, Canton, N. Y.,	2.25
Dr. Brooke M. Anspach, Philadelphia,	5.00
Dr. J. B. Haskins, Chattanooga, Tenn.,	15.00
Dr. Fred W. Phifer, Wheatland, Wyo.,	5.00
Dr Henry P. Brown, Jr., Philadelphia,	10.00
Dr. Floyd W. McRae, Atlanta, Ga.,	10.00
Dr. William L. Rodman, Philadelphia,	25.00
Anonymous, "F", St. Johnsbury, Vt.,	10.00
Dr. Joseph P. Murphy, Brooklyn, N. Y.,	5.00
Dr. Rudolph Matas, New Orleans, La.,	25.00
Dr. Neal N. Wood, First Lieut. M.C., U.S.A., Schofield Barracks, Hawaii,	5.00
Cumberland County Medical Society, Bridgeton, N. J.,	10.00
Gonzales County Medical Society, Gonzales, Texas,	10.00
Fort Wayne Medical Society, Fort Wayne, Ind.,	25.00
Ramsey Co. Med. Society, St. Paul, Minn.,	25.00
The New Castle Physicians Club, New Castle,	10.00
The Harrison Co. Medical Society, Gulfport, Miss.,	25.00
The Cumberland Co. Medical Society, Portland, Me.,	25.00
The Waterbury Medical Association, Waterbury, Conn.,	13.00
Dr. William T. Hamilton, Philadelphia,	5.00
Dr. Charles Alfred Dukes, Oakland, Cal.,	5.00
Dr. P. St. L. Moncure, Norfolk, Va.,	5.00
Dr. R. T. Stratton, Oakland, Cal.,	5.00
Dr. R. J. E. Scott, New York, N. Y.,	5.00
Dr. W. C. Cahall, Germantown,	2.75
Dr. Richard Dewey, Wauwatosa, Wis.,	10.00
Dr. E. H. Ruediger, Manila, P. I.,	10.00
Bennington Co. Med. Society, Bennington, Vt.,	10.00
Mr. A. W. Burnham, Pittsburgh,	5.00
Dr. George W. Crile, Cleveland, Ohio,	100.00
Salt Lake County Medical Society, (Third contribution)	21.00
Dr. C. P. Thomas, Los Angeles, Cal.,	5.00
Portland Medical Club, Portland, Me.,	25.00
Dr. C. H. Henninger, Pittsburgh,	5.00
Dr. J. J. Buchanan, Pittsburgh,	25.00
Dr. N. D. Murphy, Bangor, Mich.,	25.00
Col. W. H. Arthur, M.C., U.S.A., San Francisco, Cal.,	10.00
Dr. Augustus A. Eshner, Philadelphia,	10.00
Dr. S. W. Goddard, Brockton, Mass.,	10.00
Dr. Albert M. Judd, Brooklyn, N. Y.,	5.00
Dr. Calvin F. Barber, Brooklyn, N. Y.,	10.00
The Mount Vernon Medical Society, Mount Vernon, N. Y.,	10.00
The Medical Society of St. Lawrence County, Gouverneur, N. Y.,	25.00
The Orange County Medical Assoc., Santa Ana, Cal.,	25.00
Dr. Parke W. Hewins, Wellesley Hills, Mass.,	25.00
Dr. Emma B. Culbertson, Boston, Mass.,	25.00
Dr. L. L. McArthur, Chicago, Ill.,	25.00
Dr. V. B. Jackson, Washington, D. C.,	10.00
Total receipts,	$6720.50

Disbursements:—

Previously reported,	$4614.60
Week ending Mar. 13, 90 boxes at $2.30	207.00
Week ending Mar. 20, 173 boxes at $2.30	397.90
Week ending Mar. 27, 230 boxes at $2.30	529.00
Week ending Apr. 3, 64 boxes at $2.30	147.20
Week ending Apr. 10, 105 boxes at $2.30	241.50
Week ending Apr. 24, 80 boxes at $2.30	184.00
Week ending May 1, 35 boxes at $2.30	80.50
Total disbursements	$6585.70
Balance,	$134.80

F. F. Simpson, M.D., Treasurer.
7048 Jenkins Arcade Bldg., Pittsburgh.

BULLETIN EXCERPTS.

Medical Reporter, Chester.

The *Village Record* which has been published in West Chester for nearly one hundred years does not contain any patent medicine advertisements and we are told by the proprietor that this is the settled policy of the paper. We congratulate Editor Smith on this stand which places his paper in this respect on a plane with the best periodicals in the country. We wish we could say the same of all the papers published in the county. The unattractive portrait of Lydia Pinkham continues to disfigure their pages and the nauseating accounts of the symptoms for the relief of which her medicine is advised make very poor reading for young and old. Since the U. S. Government has been after the exploiters of nostrums they have modified their composition, especially their alcohol content, until most of them are inert except as a mild tipple. The meanest part of the whole affair is that their whole business depends upon their appeal to the fears and the ignorance and the credulity of the public. For instance, they try to make it appear that backache, a very common symptom of many diseases, is positive proof of disease of the kidneys, and should be treated by their kidney remedies, while any informed person knows that backache rarely accompanies kidney disease. The whole thing is a poor business and papers whose appeal is to intelligent and respectable people should decline to receive such advertisements.

Mirror, Fayette.

Medical Friendship.

The medical world is becoming strongly organized for the purposes of research and study and the results of these organized efforts are being placed in the hands of the individual practitioner for physical and moral benefits to humanity. Much has been written concerning the union to eliminate quacks, illegal practitioners and unethical medicine from the profession but as regards that bonding of social friendship little has been mentioned. In the medical fraternity there exists a rivalry for success which so long as of a friendly nature is the greatest stimulus that can be procured for the advancement and maintenance of the highest standard of medical knowledge.

No member wishes to be classed as ignorant, slothful or indifferent to his calling for that would mean injustice to those whom he serves, destruction of his own reputation and suspicion of his colleagues; consequently there arrives a stage where this rivalry ceases to be a friendly good and assumes the nature of personal enmity or jealousy, preparing the way to social ostracism by severing brotherly relations and nourishing hatred among the members of the profession and the public to the detriment not only of the individual members and public but to the profession which the individual member represents. Jealousy is usually the fruit not of love but of self love.

Tact, tenderness and patience may be given us to help to remove what may be flaws in a fine character and it is foolish to forget the great virtues of our brothers in the fretful irritation of a few blemishes. Let our intercourse with one another be kept sweet and delicate that it may remain a sanctuary where we can leave criticism outside and breathe freely. We can not live among men suspicious and careful always for our own interest and fighting always for our own hand without doing dishonor and hurt to our own nature. It is not selfishness which is the aim and the glory of friendship but unity in the midst of differences.

Dead Ones.

The membership of the society has been reduced to 111 because there were 12 dead ones, at least dead to their own interests, for they could not be awakened to the necessity of paying their dues, who thus automatically suspended themselves from membership in the county and state organizations.

Certainly they are "dead ones" because all the "live ones" see to it that their dues are paid and they read the *Mirror* and get out to the meetings. A man, especially a medical man, can not be a live one unless he pays attention to these little things, keeps his dues paid and gets something other than the protection afforded, the Journal, etc., for the five bones he puts in, he gets out to the meetings occasionally and derives the greatest benefit right there by rubbing shoulders with his fellows. Get the habit. Do not be a dead one.

Bulletin, Lancaster.

Report on Illegal Practitioners in Lancaster County by Counsel for Lancaster City and County Medical Society.

Lancaster, Pa., February 19, 1915.

To the Legal Committee of the Lancaster City and County Medical Society.

Gentlemen:—

As counsel for said medical society, I herewith submit the following report covering the period from July 1, 1914, to date.

The Radio Institute, also known as the Atamo-Radio Institute, appeared in Lancaster City, with L. Howard, an unlicensed practitioner in Pennsylvania, as Manager. C. T. Ferry and S. P. Manship, who are licensed, were associated with him. The Institute advertised extensively in the local newspapers, stating *inter alia*, that they could cure numerous diseases, including cancer, both external and internal, by their Radio Treatment. Their attractive offices were soon crowded with the gullible people of our community. The matter was brought to the attention of the Department of Medical Education and Licensure at Harrisburg, Pa., and I was deputized by said Department to proceed against L. Howard, the manager. Accordingly, he was arrested for false pretense on several of the numerous complaints, for obtaining in advance money from patients by guaranteeing to cure cancer of the stomach with which he said the parties were afflicted. The case was contested and the following opinion of the local court in our favor may be of interest and value to the members of your society, and I, therefore, submit it in full.

Commonwealth of Pennsylvania *vs.* L. Howard.

In the Court of Quarter Sessions of Lancaster County: No. 154, Sept. Sessions, 1914. Indictment No. 57. False Pretense. Demurrer to Indictment.

Oliver S. Schaeffer for Commonwealth.

John E. Malone and James H. Steinman for defendant.

OPINION.

The defendant's demurrer to the indictment in this case raises but a single question, which is, whether it charges an indictable offense.

The indictment charges that the defendant did "unlawfully and knowingly devising and intending to cheat and to defraud one, James E. Hambleton of his goods, moneys, chattels, valuable security and property, then and there unlawfully, knowingly, recklessly, and designedly falsely pretend to the said James E. Hambleton, that Mary Hambleton, wife of James E. Hambleton, had then and there cancer of the stomach in the first stage and that he, the said L. Howard, could cure absolutely said cancer of the stomach with his Radio Treatment and if he would let it go another day longer, he, the said L. Howard could not cure it and would not undertake the case, and if he wanted to save his wife's life she must begin the Radio Treatment that day, to wit, February 11, 1914; Whereas, in truth and fact said Mary Hambleton, wife of said James E. Hambleton, did not then and there have cancer of the stomach, and whereas, in truth and in fact said L. Howard could not cure cancer of the stomach by a Radio Treatment, and whereas in truth and in fact it was not necessary to begin the defendant's Radio Treatment on February 11, 1914, to save the life of said Mary Hambleton, as said L. Howard then and there well knew, by color and means of which said false pretense, he, the said L. Howard then and there unlawfully, knowingly and designedly obtained from the said James E. Hambleton the sum of sixty dollars ($60.00), the property of said James E. Hambleton with intent to cheat and defraud the said James E. Hambleton, to the great damage of the said James E. Hambleton.

It is contended that the pretenses alleged are only promises of a future course of conduct, or expressions of opinion, and not representations of a past or existing fact.

That promises of future conduct and opinions are not such pretenses as are contemplated in the Act of Assembly defining the offense of false pretense, but that the representations must be of a past or existing fact, is settled by a long line of decisions of the courts of this and of other states where statutes similar to ours are in force. It is then necessary for us to ascertain whether the representations in this indictment are of existing facts or, as is contended by counsel for the defendant, merely promises of future conduct or opinions.

We are unable to find a case decided in this state where the facts are similar to those involved here. In Jules v. State, 36 Atl. Rep. 1027, (A Maryland case), the Court of Appeals decided that it was a representation of an existing fact to say: "You suffer from stomach trouble and I can and will cure you within six weeks." The Court said: "The alleged existing fact is that he then and there had the supernatural and extraordinary power to cure in the manner claimed. In other words, the defendant is alleged to have said, in effect: 'I have the power; I have it now; I will exert that power in the future to cure you.' This, it was contended, amounts only to a future promise or a promise to cure in the future, but it is apparent that there is a false representation as well as a promise, a false representation of an existing fact and a promise to cure in the future. 'It would be difficult to find in actual life any case wherein a man parted with his property on a mere representation of fact, whether true or false, without an accompanying promise. If, therefore, we look at the promise simply as a nullity it does not impair the simultaneous false pretense considered as the foundation for an indictment.' 2 Bish. New Cr. Law Sec. 424. And the same learned author says:

'Nor does it matter that a promise by the accused operated as a part of the inducement under which the prosecutor parted with his property. The consequence attached to the false representation was not overthrown by the promise.' Id. Sec. 461." In Com. v. Wallace, 114 Pa. 405, it is decided that, where the money or property was obtained by both a pretense and a promise, the offense of false pretense is committed. Justice Trunkey says: "It is settled that when a pretense and promise are made together, and both operate in the inducement, the case is within the statute, if the pretense of a false existing or past fact be sufficient. Indeed, when they are blended, it may be difficult to prove one without the other; and equally difficult to state the pretense without the accompanying promise, in the indictment. Both may be proved, and the jury determine whether the prosecutor would have parted with his property without the pretense. If the grand jury act intelligently, they would no more likely find a true bill on the promise alone, than the petit jury would a verdict of guilty. They hear the testimony of the blended pretense and promise, and that both are in the indictment can work no prejudice to the defendant."

People v. Arberry, 114 Pac. Rep. 411, is a case very similar to this one. The defendant represented that a man had valvular disease of the heart which endangered his life, and that he, the defendant could and would cure it for two hundred dollars. The Court said: "The statement that defendant was suffering from a valvular disease of the heart was a statement of a fact. It was not given as an opinion, but it was a statement voluntarily made by defendant. . . . It is not pretended that the statement is true, and it was made just at the time and contemporaneous with the attempt to get an additional $200.00 from the aunt. . . . He made a false statement as to an ailment that had no existence; and not only this but stated that he could cure it." A conviction of the defendant for false pretense was sustained.

"In the case we are considering, the indictment charges the defendant with having made two representations and they, in the light of the above cases are of existing facts: First, that the prosecutor's wife had cancer of the stomach in the first stage; and second, that he could cure absolutely said cancer with his Radio Treatment. The statement of the disease was more than an opinion. It was a positive statement of fact. It left nothing doubtful about it. The allegation in the indictment that the defendant knew it was false (and we must consider both together in disposing of this demurrer) is equivalent to alleging that it was not an opinion but a deliberate false statement of fact. That he could cure it absolutely with his Radio Treatment was not an opinion nor a promise of what he would do. It was an assertion that he had power to cure the disease with his Radio Treatment. As in the other representation, the fact that the indictment alleged that he knew the assertion was false (which must be considered with it in this proceeding) is equivalent to saying that he deliberately misstated the fact that he possessed the power to cure with his Radio Treatment.

"But, even though we consider this latter pretense a promise as to what he would do in the future, as defendant contends we should, though we do not think it capable of that construction, it and the representation of fact as to the disease with which the prosecutor's wife was suffering were made together and both operated together to induce the payment of money by the prosecutor to the defendant: and, as a representation of fact, as to the disease is sufficient to sustain the indictment, the case is within the statute. Com. vs. Wallace supra. In 19 Cyc. 398, the rule is stated that "a false pretense of having ability, power or authority to do an act is within the statute, and to obtain property by such means is indictable."

The defendant's counsel has cited two cases which seem to be at variance with these views. In State v. Burnett, 21 N. E. Rep. 972 (an Indiana case), the representations were that the defendant was a witch doctor and could kill and destroy witches, and that the person to whom the representations were made was the victim of witches, and that, unless he employed the defendant to destroy them, they would kill him and his family. The court held that the representations were not sufficient to constitute the offense of false pretense, for the reason that they "were not such as a man of common understanding was justified in relying upon, and because the representations consisted principally in expressions of opinion and not of existing facts." It is not contended that the indictment in our case is bad because the representations are such as would not deceive a man of common understanding, and we are not convinced that the finding of that court that the representations are mere expressions of opinion is correct. In State v. Daniel, 19 S. E. Rep. 100 (a North Carolina case), the defendant, a physician pretended that certain medicine was too strong to be used on a sore of the face of the prosecutor, and thereby obtained possession of it, "the inference being that it was his intention to temper or weaken it." The Court held that this was but an expression of opinion and, therefore, not such a representation as was necessary to make out the offense of false pretense. Neither one of these cases convinces us that the views we have expressed above are erroneous, in view of the fact that they conform to the opinions of the courts in the cases which we have cited.

The fact that the indictment does not allege that the defendant treated the prosecutor's wife for cancer of the stomach, which is one of the reasons alleged in the demurrer, we do not consider necessary for us to discuss. Such an allegation is not necessary to make the indictment good.

For the reasons herein expressed, we overrule the demurrer.

(Signed) A. B. Hassler, Judge.

At the instance of the State Department of Medical Education and Licensure, I have dealt with the following parties, who were reported to me as unlicensed practitioners and drugless healers in Lancaster County, all of whom have either been stopped or have discontinued voluntarily after notice and interview.

R. D. Becker, Lancaster City, Chiro-Practice treatments. Took the state examinations twice recently but failed. He had taken a short medical course in Chicago. He is going to Maryland to practice.

Mrs. Israel Bowers, Elizabethtown, Pa. Pow-wowing and selling home-made drugs.

Fred. Cobel, Elizabethtown, Pa. Pow-wowing.

David Doutrich, Gap, Pa. Pow-wowing for animals.

John Getz, Terre Hill, Pa. Pow-wowing and selling herbs and salves.

Harry Graybill, Quarryville, Pa. Pow-wowing.

Edward Hanf, Lancaster City. College of Natural Health and Electrical Treatments. Took the state examination recently but failed.

L. Howard, Lancaster City. Arrested for false pretense in three cases, see report supra.

Dr. J. Newhall Kirk, Lancaster City. Radio Treatment. After two weeks' practice was driven out of town and forced to make a money settlement with some patients under an attachment issued by me and a levy obtained on his paraphernalia.

Cyrus Hoke, Lancaster City. Electric and Magnetic Treatments and Newspaper Advertisements. Has agreed to give up his treatments and to conduct his business on a purely commercial basis, selling his magnetic belts, etc. Intends to leave Lancaster.

Mary Koenig, Lancaster City. Pow-wowing. Claims to have been a trained nurse in Germany.

Harry D. Leeking, Lancaster City. Various methods, including laying on hands. Has left the City.

Bishop Light, Mountville. Pow-wowing or Divine Healing.

Prof. M. McClure, Lancaster City. Claims that he can cure Typhoid Fever in twelve hours without internal medicine.

Mrs. Samuel Nolt, Oregon, Lititz. Pow-wowing.

Oxypathy Company, Lancaster City. (William M. Geyer, proprietor). Has left the City.

Elizabeth Shank, formerly Martin, Bareville. Pow-wowing.

J. Sheaffer, Ephrata. Pow-wowing.

Gertie Snepf, Gap. Pow-wowing.

Dr. G. W. Tracey, Lancaster City. Identified with Dr. Kirk, above referred to. Warrant out for his arrest and he disappeared. False pretense charge against him.

The United Doctors. Advertised that they will be in Columbia, Mt. Joy, Lititz and Strasburg for a short time. Dr. George Hide, of Pittsburgh, Pa., is identified with the Company. They are being investigated. Burton E. Manchester, of Milwaukee, not licensed in Pa., is the manager.

Viavi Co., Lancaster City. Agreed to eliminate their application forms and symptom blanks and promised to conduct their business on a purely commercial basis.

Elizabeth Wenger, Leola. Sells "Hepatola" for gallstones, etc. She and her company, of Columbus, Ohio, promised to eliminate certain objectionable features of their work and promised to sell only their patent medicines in the future.

Israel Widders, Murrel, near Ephrata. Pow-wowing.

The lid is apparently down now on illegal medical practitioners in Lancaster City, but it will require close surveillance and continued effort in the future to prevent a resumption of such illegal practice, and especially to be on guard for quacks and mountebanks. The recent Acts of Assembly, passed by the State Legislature, furnish a new legal weapon with which to reach and punish those who violate the law as unlicensed or illegal practitioners of medicine or drugless therapy. I understand that a statewide movement is being inaugurated to enforce the new law.

The motive and spirit thereof is the safeguarding of human lives and toward this noble end, the cooperation of the medical profession and public-spirited citizens is earnestly invited.

Respectfully submitted,
OLIVER S. SHEAFFER.
Attorney for Lancaster City and County Medical Society.

Weekly Roster, PHILADELPHIA.

THE PROPOSED COUNTY SOCIETY BUILDING.

The preliminary report of the Committee on Home of the Philadelphia County Medical Society presented April 21, 1915, at the quarterly business meeting of the Philadelphia County Medical Society, states:—

Gentlemen: . . . In view of the hope cherished by many members of this society that it shall possess its own meeting place at an early date, a home in which there will be sufficient room to grow and carry out its reasonable work and activities, your committee has held several meetings at short intervals and has taken certain steps with a view to bringing that laudable hope to a speedy fruition. In the first place one of your committee has taken an option for three months without cost to the county society, on the Jayne property at the S.E. corner of 19th and Chestnut Streets. It is the unanimous feeling of the members of your committee that a more desirable location than the above could not be found in Philadelphia. Again, the asking price of $425,000 is not excessive, and your committee has been assured that a contribution of $25,000 will be made by a member of the Jayne family. This site has a width of 101 feet and a depth of 135 feet so that a building with a frontage of 86 feet on Chestnut Street could be erected thereon.

Additionally, it was thought wise by the committee to take an option on the property adjacent on Nineteenth Street for a like period of time. This has been done without cost to the society, so that the dimensions of the area controlled temporarily are a width of 101 feet on Chestnut Street and a depth of 160 feet on the east side of Nineteenth Street.

The above options were taken in order that time would be allowed to determine the character of building to be erected, to ascertain the best methods of financing the undertaking as well as to create sufficient sentiment among the members of the Philadelphia County Medical Society to insure the success of the enterprise.

COST OF PROPOSED BUILDING, REVENUE, CHARGES, ETC.

Cost of ground	$400,000.00
Cost of building, including financing, carrying charges and architects' fee.	830,000.00
Total cost	$1,230,000.00

REVENUE.

Rent, 9 stores at $2500 per year each	$ 22,500.00
Rent, auditorium one night each week at $150 per night	7,800.00
Rent, 6 committee rooms at $400 per yr. each.	2,400.00
Rent, 11 office floors with 9600 sq. ft. of actual office area on each floor making a total of 105,600 sq. ft. of actual office area at $1.75 per sq. ft.	184,800.00
	$217,500.00
Less 10 per cent. allowance for vacancies.	21,750.00
Gross revenue	$195,750.00

CHARGES.

Wages.

Superintendent	$2,000.00
Day engineer	1,500.00
Night engineer	1,200.00
3 Firemen at $700	2,100.00
1 Elevator starter	780.00
4 Elevator operators at $480	1,920.00
1 Night operator	480.00
33 Cleaners at $20 per month	7,920.00
2 Cleaners for Auditorium	960.00
3 Hall men at $480	1,440.00
	$20,300.00
Coal, 6 tons per day at $3.50 per ton	7,665.00
Ashes removed	1,000.00
Repairs	6,000.00
Toilet supplies	750.00
Water rent	1,200.00
Taxes, $980,000	14,700.00
Insurance, $700,000 at 20 c. per hundred	1,400.00
	$53,015.00

Net revenue	$142,735.00
First mortgage $740,000 at 5½ per cent.	$40,700.00
Bonds, $490,000 at 6 per cent.	24,000.00
	$64,700.00
Net gain	$78,035.00

It is expected that some financial institution will place a first mortgage for about $1,000,000 at the prevailing market rate of interest. It is also believed that a second mortgage in the amount of $200,000 can be arranged for by the builder of the structure. The remainder, or from $250,000 to $300,000, it will be necessary for the members of this society and their friends to raise, and it is thought by your committee that the best method would be to issue common stock bearing 6 per cent. interest, and to secure the same by a third mortgage bond.

It is further proposed to create a Holding Company, which shall be controlled by those members of the county society who will become financially interested in the proposition. The intention, however, is to transfer the title of the new home to the Philadelphia County Medical Society so soon as the second mortgage shall have been satisfied and the investors reimbursed.

Your committee, on motion duly seconded and adopted, recommends that $10,000 be subscribed by the Philadelphia County Medical Society from the funds of its treasury, and that $40,000 be raised by the society through paid up life membership dues of $100 each, which shall be on the death of the member paid to his estate, and that said sale of life membership be limited to 400.

It is further recommended for adoption that members taking stock will be entitled to a 6 per cent. dividend which in the event of their taking an office in this building shall be deducted from their annual rental.

Again, it is recommended by your committee that a paid agent be engaged by the Philadelphia County Medical Society to obtain subscriptions, in order that the common stock to be held by members and their friends, may be taken at the earliest moment.

Your committee feels that, owing to the numerical strength of the Philadelphia County Medical Society on the one hand, and the certainty with which the project could be successfully carried forward if the members were to lend a reasonable amount of support to the venture, on the other, a united effort should be put forth with a view to procuring a home that will meet the present and future necessities of the society. Surely, in a matter that means so much to the future life, development and progress of the Philadelphia County Medical Society, as well as to the medical profession of Philadelphia, there should be no lack of either zeal or material aid, in order that the aims and hopes of this great and influential body may be speedily realized. Dr. Joseph Sailer, Dr. Wm. Duffield Robinson, Dr. I. P. Strittmatter, Dr. C. A. E. Codman, Dr. Levi J. Hammond, Dr. Jay F. Schamberg, Dr. Henry W. Cattell, Dr. James M. Anders, Chairman.

This report was duly received and further action taken that a canvasser be engaged to interview members of the society as to subscriptions, under the foregoing plan, and rental of offices in the new building.

Meeting of the American Medical Association

SAN FRANCISCO,

JUNE 21-25.

See *Journal A. M. A.*, May 15th.

COMMUNICATIONS.

PROPOSED AMENDMENT TO THE CONSTITUTION.

Philadelphia, February 20, 1915.

Dr. C. L. Stevens, Secretary,
Medical Society of the State of Pennsylvania,
Athens, Pa.

Dear Dr. Stevens,—

I desire to offer an amendment to the Constitution and By-Laws of the Medical Society of the State of Pennsylvania.

To amend Article IV., Section 1:—

Membership of this Society shall consist of the members of the component County Medical Societies who are in good standing in their respective societies.

Section 2: To omit the present section and insert the following:—

Any member of a constituent Society in affiliation with the Medical Society of the State of Pennsylvania may become a Fellow by applying for Fellowship and subscribing for the Pennsylvania Medical Journal, and paying the annual Fellowship dues for the current year.

Section 3:—

To amend Section 3 by crossingf out the word "member" and inserting the word "Fellow" throughout the Section.

Very truly yours,
William S. Wray.

RED CROSS WORK IN HUNGARY.

Budapest, April 10, 1915.

To the Editor: The yellow section relative to vivisection (Supplement to the February issue of the Journal) has been forwarded to me here in Budapest, and I take pleasure in answering your four questions and herewith please find enclosed.

Permit me to take this opportunity to say a few words relative to my stay here. I am serving on the surgical staff of Professor Dollinger, having come as a volunteer in January. In times of peace this is the Royal Hungarian University Hospital but now it is under the military (Hungarian Red Cross).

In this great city are the base hospitals, all kinds of buildings, from churches to electrical factories, being utilized, some of fifty, others of twelve hundred beds. They are all remarkably well equipped. Here is where the serious operations are done. Scattered along the front are some fifteen quarantine hospitals, each of a capacity of four thousand beds. The wounded have to pass these quarantine hospitals and then are shipped here. This eliminates typhus, cholera and dysentery from Budapest, and probably makes it the healthiest European city at present, and will do much toward preventing epidemics when the warm weather comes. Most of these diseases are begotten from the Servian prisoners of war; the Servians do not know the meaning of hygiene.

It has been fully demonstrated here that conservative surgery is the best. Bullets are removed only when they give pain by their pressure, in the aseptic cases. Removal of aneurysms, nerve suturing and bone surgery are daily done.

Charles S. Pancoast, M.D.
The Budapest Royal Hungarian University Hospital.

REVIEW.

SURGERY; ITS PRINCIPLES AND PRACTICE. For Students and Practitioners. By Astley Paston Cooper Ashhurst, A.B., M.D., F.A.C.S., Instructor in Surgery in the University of Pennsylvania: Associate Surgeon to the Episcopal Hospital; Assistant Surgeon to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. Handsome large octavo, 1141 pages, with 7 colored plates and 1032 illustrations, mostly original, in the text. Cloth, $6.00, net. Philadelphia: Lea and Febiger.

This new textbook of surgery is one of the most important publications of the past year in any branch of medical science. It represents the most modern thought and practice, and reflects the qualifications, literary as well as professional, of its talented author. Dr. Ashhurst has presented clear and accurate statements of facts, and has placed emphasis on the underlying principles; he has given particular attention to pathogenesis, diagnosis and indications for treatment, and has completed the whole with adequate descriptions of operations. A decided feature of the work is the series of 1032 illustrations, which are almost entirely original, and have been prepared especially for it. Each one has been chosen for the information it conveys. The sections on Fractures and Dislocations and on Diseases of the Bones and Joints will be appreciated by those familiar with the author's excellent monograph on "Fractures of the Elbow." Genitourinary surgery, gynecology and orthopedics are discussed at sufficient length to meet the requirements of general surgeons. But little space is given to diseases of the Eye, Ear, Nose and Throat. L. F. P.

BOOKS RECEIVED.

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Selected Addresses On Subjects Relating to Education, Biography, Travel, etc., by James Tyson, M.D., LL.D., Professor of Medicine, Emeritus, University of Pennsylvania. Philadelphia: P. Blakiston's Son and Company, 1012 Walnut Street. Price $1.75 net.

Surgery of the Blood Vessels. By J. Shelton Horsley, M.D., F.A.C.S., Surgeon-in-Charge of St. Elizabeth's Hospital, Richmond, Va.; a Founder and Fellow of the American College of Surgeons; Ex-President of the Richmond Academy of Medicine and Surgery; Member of Southern Surgical and Gynecological Association, etc. Illustrated. St. Louis: C. V. Mosby Company. Price $4.00.

"Swat the Fly!" A one-act fantasy. By Eleanor Gates, Author of "The Poor Little Rich Girl," "We are Seven," "The Biography of a Prairie Girl," "The Plow-Woman," etc. Colored jacket by Everett Shinn. The Arrow Publishing Company, 116 West Fifty-ninth Street, New York. Price twenty-five cents.

Fewer and Better Babies. By William J. Robinson, M.D., Chief of the Department Genitourinary Diseases and Dermatology, Bronx Hospital and Dispensary, New York. With an introduction by A. Jacobi, M.D., LL.D., Ex-President of the American Medical Association. New York: The Critic and Guide Company. Price $1.00.

Transactions of the College of Physicians of Philadelphia. Third Series, Volume the Thirty-sixth. Philadelphia: Printed for the College.

Transactions of the Thirty-sixth Annual Meeting of the American Laryngological Association, held at Atlantic City, N. J., May 25, 26 and 27, 1914. New York: Published by the Association.

Animal Experimentation and Medical Progress. By William Williams Keen, M.D., LL.D., Professor Emeritus of Surgery, Jefferson Medical College, Philadelphia. With an introduction by Charles W. Eliot, LL.D., President Emeritus of Harvard University. Boston and New York: Houghton Mifflin Company.

Medical Jurisprudence. A Statement of the Law of Forensic Medicine. By Elmer D. Brothers, B.S., LL.B., Member of the Chicago Bar; Lecturer on Jurisprudence in the Medical and Dental Departments of the University of Illinois, and in John Marshall Law School. St. Louis: C. V. Mosby Company. Price $3.00.

The Tonsils. Faucial, Lingual and Pharyngeal. With some account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School; Surgeon in the Department for Diseases of the Nose and Throat, Boston Dispensary: Assistant Laryngologist, Massachusetts General Hospital. Illustrated. St. Louis: C. V. Mosby Company. Price $3.00.

Cancer. Its Cause and Treatment. By L. Duncan Bulkley, A.M., M.D., Senior Physician, The New York Skin and Cancer Hospital, etc. New York: Paul B. Hoeber. Price $1.50 net.

A Handbook of Psychology and Mental Disease. For use in training schools for attendants and nurses and in medical classes, and as a ready reference for the practitioner. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases; Formerly Medical Superintendent of the Eastern Michigan Asylum. Fourth edition, revised and enlarged, with illustrations. Philadelphia: F. A. Davis Company, Publishers. Price $1.50 net.

Diseases of Bones and Joints. By Leonard W. Ely, M.D., Associate Professor of Surgery, Leland Stanford Junior University, San Francisco, Cal. New York: Surgery Publishing Company. Price $2.00.

Guiding Principles in Surgical Practice. By Frederick-Emil Neef, B.S., M.L., M.D., New York City. Surgery Publishing Company, New York. Price $1.50.

First Annual Report of the Commissioner of Labor and Industry. 1913. Part I. Production Wages, Employees, Immigration and Unemployment, Comprising Data Collected and Compiled. By the Bureau of Statistics and Information. Harrisburg, 1914. Harrisburg: William Stanley Ray, State Printer. 1915.

Mortality Statistics, 1913. Fourteenth Annual Report. Department of Commerce, Bureau of the Census. William J. Harris, Director. Washington: Government Printing Office. 1915.

Differential Diagnosis. Presented through an Analysis of 317 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 709 pages, 254 illustrations. Philadelphia: W. B. Saunders Company. Cloth, $5.50; half morocco, $7.00.

A Laboratory Manual and Textbook of Embryology. By Charles W. Prentiss, A.M., Ph.D., Professor of Microscopic Anatomy in the Northwestern University Medical School, Chicago. Octavo of 400 pages with 368 illustrations, many of them in colors. Philadelphia: W. B. Saunders Company. Cloth, $3.75.

Medical Electricity and Roentgen Rays and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Second edition, thoroughly revised and enlarged. Octavo of 1219 pages, with 798 practical illustrations, 16 in colors. Philadelphia: W. B. Saunders Company. Cloth, $7.50 net; half morocco, $9.00 net.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV., Number 1. (February, 1915). Octavo of 185 pages, 41 illustrations. Volume IV., Number 2 (April, 1915). Octavo of 197 pages, 47 illustrations. Philadelphia: W. B. Saunders Company. Published Bimonthly. Price per year: Paper, $8.00, Cloth, $12.00.

A Textbook of Medical Chemistry and Toxicology. By James W. Holland, M.D., Emeritus Professor of Medical Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Fourth edition, thoroughly revised. Octavo of 678 pages, 116 illustrations. Philadelphia: W. B. Saunders Company. Cloth, $3.00 net.

Pathological Technique. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M.D., Associate Professor of Pathology, Harvard Medical School; and J. H. Wright, M.D., Pathologist to the Massachusetts General Hospital. Sixth edition, revised and enlarged. Octavo of 536 pages with 174 illustrations. Philadelphia: W. B. Saunders Company. Cloth, $3.00.

Pyelography (Pyelo-Ureterography) A Study of the Normal and Pathological Anatomy of the Renal Pelvis and Ureter. By William F. Braasch, M.D., Mayo Clinic, Rochester, Minn. Octavo volume of 323 pages, containing 296 pyelograms. Philadelphia: W. B. Saunders Company. Cloth, $5.00 net.

A Manual of Diseases of Infants and Children. By John Ruhräh, M.D., Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore, Md. Fourth edition, thoroughly revised. 12mo volume of 552 pages, 175 illustrations. Philadelphia: W. B. Saunders Company. Cloth, $2.50 net.

Dissection Methods and Guides. By David G. Metheny, M.D., L.R.C.P., L.R.C.S. (Edin.), L.F.P.S. (Glas.), Associate in Anatomy and for sometime Senior Demonstrator in the Daniel Baugh Institute the Department of Anatomy and Biology, Jefferson Medical College, Philadelphia. Octavo volume of 131 pages, illustrated. Philadelphia: W. B. Saunders Company, 1914. Cloth, $1.25 net.

A Practical Textbook of Infection, Immunity and Specific Therapy with special reference to immunologic technic. By John A. Kolmer, M.D., Dr.P.H., Instructor of Experimental Pathology, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology, University of Pennsylvania. Octavo of 899 pages with 143 original illustrations, 43 in colors. Philadelphia: W. B. Saunders Company. Cloth, $6.00 net, Half Morocco, $7.50 net.

A Textbook of Diseases of the Nose and Throat. By D. Braden Kyle, A.M., M.D., Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia. Fifth edition, thoroughly revised and enlarged. Octavo of 856 pages with 272 illustrations, 27 of them in colors. Philadelphia: W. B. Saunders Company. Cloth, $4.50 net.

New and Nonofficial Remedies, 1915. Containing Descriptions of the Articles Which Have Been Accepted by the Council on Pharmacy and Chemistry of the American Medical Association Prior to Jan. 1, 1915. Chicago: American Medical Association. 535 No. Dearborn St. 1915. Price, Paper $ .50; Cloth $1.00.

SOCIETIES.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of December 7, 1914, Dr. S. Lewis Ziegler, chairman.

A Case of Epithelioma of the Lid. Dr. William Campbell Posey showed a case of epithelioma of the lid that was being treated by Dr. S. D. Risley by means of the *x*-ray. The patient had previously been treated by another physician, who had prescribed a salve. This did not, however, help the condition a great deal. Dr. Posey stated that, if he were treating the case, he would operate, cutting out all the diseased tissue, and turning in a flap from the temple; even though this operation would probably lead to the loss of the eye, the inferior cul-de-sac having been wiped out, and the growth extending far back.

Report of a Case of Uveitis of Metastatic Gonorrheal Origin. Dr. Posey then gave notes of a case of an eye lost from uveitis, probably in consequence of metastatic gonorrhea. Although he had not seen the case at its commencement, he had been informed by the practitioner having the patient in charge that the initial ocular symptoms consisted of a thickening and redness of the pericorneal scleral tissues. Bulbar chemosis soon developed, and a number of small brown ulcers appeared at the corneal limbus. Despite active local and constitutional treatment, the cornea rapidly melted away, and perforation occurred. Enucleation was demanded. There was a history of a specific urethritis about twenty years previously, followed by various urethral complications and rheumatism affecting most of the joints of the extremities. Anti-gonorrheal bacterins were used without avail, although a synovitis that appeared at the right knee coincidently with the ocular inflammation yielded rapidly to the injections.

Dr. Posey referred at some length to the ocular manifestations of metastatic gonorrhea, and said that in his practice he had encountered quite a few instances of conjunctivitis from such an origin. He had seen involvement of the cornea in several cases. Gonorrheal rheumatism, too, he considered one of the most frequent causes of iritis. He had usually observed marked improvement in the local symptoms following the use of the bacterins.

Dr. Ziegler asked Dr. Posey whether any microorganisms had been found in the tissues of the eye.

Dr. Posey replied that this had not been tested, the eye having come away piece-meal as soon as he tried to take out the cornea.

A Case of Disciform Keratitis. Dr. J. Milton Griscom exhibited this case. The patient, aged forty-nine years, who had first complained of a small spot, interfering with his vision, about three months previously. There was no redness of the eye nor pain. Two weeks before coming to the hospital, the right eye had become painful and very much inflamed, with marked reduction of vision. On admission to the clinic, there was marked ciliary congestion. The cornea showed a central area of whitish infiltrate, 3x4 mm. in extent. It was disciform in shape, and located in the superficial layers of the corneal stroma. The infiltrate had a sharply defined margin, and was surrounded by a zone of fine branching lines of infiltrate. The corneal epithelium was somewhat roughened, and there was a central pinhead-sized depressed area, which was covered with epithelium. There had been no material change during the past two weeks of treatment, which had consisted in the local application of atropin, dionin and hot stupes, and the internal administration of an alterative tonic.

Dr. William Zentmayer showed a water-color sketch that he had exhibited at a meeting of the College of Physicians two years before. He did not think that the members of the society had ever seen it, and offered it to exemplify some of the points in Dr. Griscom's case, especially the little, fine radiating lines, which, he said had shown very clearly in the dark room. He stated that Fuchs had called attention to these lines, which are believed to be due to wrinkling of Descemet's membrane, and said that the condition had first been described as "cold abscess." Although some experimental work that seemed to bear out this view had been done with vaccine virus, Peters had afterwards come forward with evidence pointing to a neurôpathic origin; and Verhoeff had subsequently arrived at the same conclusion. Dr. Zentmayer believed the condition more likely to be microbic in origin.

Transillumination in the Negro Race. Dr. Griscom read a note in which he stated that, about three years before, while endeavoring to determine the nature of an intraocular growth in a negro patient, under the service of Dr. S. Lewis Ziegler, at the Wills Hospital, he had found it impossible to transilluminate any part of the eye under examination. As a means of comparison, the opposite eye, which was normal, was tested; and it also, was found to be impervious to concentrated light placed over any portion of the globe. Further investigation revealed the fact that the pupillary glow in an eye subjected to the transillumination test was much reduced in the negro race; and in many cases, was entirely absent. This reduction in the main was found to be proportionate to the intensity of the skin pigmentation; but this was by no means an invariable rule. The foregoing observation was recorded by Dr. Griscom on account of its medicolegal, as well as its clinical, significance. He stated that the explanation lies in the fact that the uveal pigment, which does not transmit light, is normally more dense in the negro. In his opinion, the blocking of the light-rays in persons of that race is entirely physiological.

Dr. Zentmayer considered this an important clinical observation, which, he thought, should be borne in mind in cases suspected of intraocular growth in the negro race. He asked how many cases Dr. Griscom had tested in order to check up his observation, saying that this test should be made in other cases, so as to determine whether all colored persons show the same negative result to transillumination.

Dr. Griscom replied that, after the observation had been made, he had, for about two months, tested every colored person that had come to the clinic. At least one hundred eyes had been tested by him in this work; and he thought that the condition is of fairly regular occurrence. He stated that while the intensity of the illumination is reduced in colored individuals, the result of the test is not always entirely negative. In some cases, however, he said, the light-rays are entirely cut off.

A Case of Interstitial Keratitis. Dr. Charles R. Heed exhibited this case. The patient, a young colored woman, showed a very decided vascularization of the cornea, of the Salmon patch of Hutchinson type. She had been in Dr. Sweet's clinic since October 23; so that the condition was of less than two months' duration, the eye having been sore but two days when she came to the clinic. The appearance at that time had been that of a fascicular keratitis. A few vessels in the conjunctiva were congested at the limbus; and then, extending from the limbus three millimeters into the substantia propria of the cornea, there was a gray infiltration, the base of which was triangular in outline. The infiltration was two to three millimeters in size. The condition progressed quite rapidly from that time on. The patient was put under atropin, and a Wassermann examination was made. The test was positive in result. Within ten days' time, the infiltration of the cornea took on a yellowish appearance, much like that of a suppurating condition. The vascularization was almost universal in extent, and there appeared the bluish tint of episcleral injection. The patient was admitted to the hospital, and sweats were given her, with inunctions twice a day for a week. Then she left the hospital. Since that time, she has been using inunctions and local treatment with atropin. The corneal infiltration has cleared up very much. Dr. Heed stated that the patient is twenty-two years of age, and has been married four years. She has had no children, and there is no history of any luetic condition. Five other children in the same family are all healthy and well. When ten years of age her eyes became sore. They remained so, off and on, for two years; but there was no evidence in the right eye of any interstitial trouble.

Dr. Posey inquired whether the patient had Hutchinson's teeth.

Dr. Heed replied in the negative, and stated that there were no signs of hereditary lues. A diagnosis of acquired interstitial disease was made from the fact that one eye alone was involved, that there were no hereditary signs of lues, and that the onset was late.

Meeting of January 9, Dr. William Zentmayer, chairman.

Epithelioma of the Lid. Dr. Samuel D. Risley said that the patient had been sent to him three or four weeks previously, when the lower eyelid was drawn strongly downward on account of an epitheliomatous growth, which was thickened and granular. There was coincident involvement of the retrotarsal fold, and very deep involvement of the external canthus. The patient stated that some months before this time, he had a plaster applied to a little growth on his face, which Dr. Risley imagined to be similar to that then present. The person who had applied the plaster had assured the patient that he had taken the growth out entirely; but, as the result, the lid was drawn downward, and great deformity was produced in the scar tissue caused by the plaster treatment.

Dr. Risley induced the patient to have the *x*-ray applied, which was done with the help of Dr. William M. Sweet, it being then too late to replace the diseased cells with healthy epithelial cells from elsewhere in the body.

The *x*-ray was applied for three days in succession, this being followed by a rest of three or four days before the procedure was resumed. The patient rapidly grew better. The three or four large islands of rapidly advancing disease disappeared; the whole surface became healthy; and the improvement was steady up to a time when, for some reason that Dr. Risley was unable to explain, the condition began to grow worse. Dr. Sweet then suggested that they might be doing too much, and thus causing an inflammatory reaction; so the treatment was stopped for a few days. Then applications of briefer duration were made at more frequent intervals. Since that time, the man has steadily improved. During the last week, the applications have been made to a more limited area and for a longer period of time, in order to affect the deeper tissues more strongly than could be done by making the application over a larger area for the same length of time. Indeed, the latter could not have been done without injury to the patient, who is now feeling much more comfortable, the deformity having been largely reduced.

Dr. Risley stated that a growth now present on the face, which had not yet assumed a malignant aspect, was, in his opinion, likely to do so. He had formerly advised the patient to let this alone and not do to it anything likely to cause irritation; but he has now advised her to go to Dr. William L. Clark and have this growth removed by means of desiccation, a method that Dr. Risley had himself employed with good results, having removed several epithelial tumors from the lid of a lady so completely that one could not tell where they had been. One application, of about two minutes' duration, had been required in the case of each tumor. The growth crumbled down, and the patient broke it off. At the end of a month, there was no scar remaining. For about two weeks, she could notice a slight change in the color of this area as compared with that of the skin surrounding it but, later, one could not tell that the growth had ever been there.

Pulsating Exophthalmos. Dr. William Campbell Posey showed a case of double pulsating exophthalmos, following fracture of the base of the skull, in which the exophthalmos, bruit and other symptoms of the condition had rapidly disappeared after ligation of the right common carotid and resection of the orbital veins. Vision, also, rose from 1/60 to 6/60 in the right eye, but was unimproved in the left, which was practically blind from optic atrophy. Dr. Posey had exhibited the same case at a previous meeting, prior to operation; and the contrast was most striking.

O'Connor Operation. Dr. Posey exhibited a boy with alternating convergent strabismus of 50°, upon whom he had recently performed an O'Connor advancement operation in both external rectus muscles. Absolute parallelism had been obtained for eight days following the procedure; but on the eighth day, the suture in the left eye had apparently given way, allowing the eye to converge about twenty degrees. Suitable glasses will be prescribed, and parallelism obtained by guarded tonotomies of the internal rectus muscles.

Tansley-Hunt Operation. Dr. Posey also showed the results obtained in a case of traumatic ptosis from the Tansley-Hunt method. The left lid of the patient, a man thirty years of age, had been almost entirely torn away by a hook; and an extensive plastic operation had been necessary in order to coaptate the lips of the wound and restore the lid to its normal condition and position. Dr. Posey chose the Tansley-Hunt procedure, on account of the cicatricial contractions and thickening of the lid resulting from the injury, in preference to any of the other operations for ptosis; as this method permits of the removal of as much superfluous lid-tissue as may be deemed necessary, and as elevating the lid by means of a broad flap of skin and subcutaneous tissue avoids the nicer dissection of the sublying aponeurosis, which is a feature of the Bass, Wilder and other methods.

Sclerosing Keratitis. Dr. Posey also exhibited a woman with a typical active tubercular sclerosing keratitis in one eye; and the marks of an old inflammation, of similar type, in its fellow. When first seen, there was a well-marked staphyloma of the uvea in the affected eye; the cornea was densely hazed; and vision was reduced to hand movements. Rapid improvement, with subsidence of the staphyloma, followed hypodermic injections of tuberculin, after the method of von Hippel; and locally, heat, atropin, dionin and careful bandaging.

Optic Atrophy from Ethmoid Disease. Dr. Posey also exhibited a young girl, blind in the right eye from optic atrophy in consequence of ethmoid disease, in whom the lower temporal field in the left eye had recently become lost. A careful search is being made to ascertain the cause of the loss in vision in that eye.

The Desiccation Treatment of Epitheliomata and Nevi of the Lids and Canthi. Dr. William L. Clark said that the devitalization of adventitious growths by desiccation is produced by applying to the growth a sustained degree of heat that is not of sufficient strength to carbonize it, but of just sufficient strength to dehydrate it, converting the growth into an inert, desiccated mass. A concentrated, specialized electric current of high potential is utilized for this purpose.

Desiccation, in his opinion, possesses the following advantages: (1) Accessible abnormal tissue may be destroyed rapidly and effectively and the operation is bloodless. (2) It is a method of precision. A small point may be destroyed without infringement upon normal tissue, as may an area of large size and considerable depth; and there is no danger of injuring the sclera. (3) No needle or other instrument is inserted into the growth. (4) The current has an anesthetizing property, which usually renders the application bearable. (5) There is a devitalizing action on cells of less vitality than normal cells somewhat deeper than the desiccated area, the normal cells recovering. (6) There is sterilization, followed by rapid repair. (7) Blood- and lymph-channels are sealed, which lessens the likelihood of metastasis in cases of malignancy. (8) There is an absence of contracted cicatricial tissue.

In choosing a method for the treatment of epitheliomata, especially those near the eye, said Dr. Clark, the length of time in which there is freedom from recurrence is not the one important point to be considered, and should not be the deciding factor in determining the merit of the method to be employed. After excision of epitheliomata of the lids and canthi, no matter how thoroughly the work appears to have been done, there is a percentage of recurrence. In such cases, if excision is practiced a second or a third time, there is usually unsightly deformity, often with exposure of the eyeball, notwithstanding the best plastic work. This is not true of desiccation, according to Dr. Clark. Should one or several recurrences appear, desiccation may be employed without the deforming results attendant on excision. The objection to the use of radium or the roentgen ray, caused by the fact that so much time is required to produce the result and by the danger to the eyeball, does not apply to the desiccation method. Accessible tissue may be destroyed by one application, if desired; and Dr. Clark thought that this should always be the aim in cases of malignancy, because it is the keynote of success. This method being a precise one, a pin-point surface, as well as a large area, may be devitalized to a considerable depth; and there is no contracted cicatricial tissue, as is the case after cauterization or the use of chemical caustics.

Dr. Clark's ideas on this subject are not in accord with those of the men who advocate excision of growths of the lids and canthi. Experience has led him to the conviction that excision is the least desirable method of treating localized epitheliomata. He said that anyone who had ever seen such a growth destroyed by desiccation and had observed the results must be impressed with its merits.

J. Milton Griscom, Secretary.

COLLEGE OF PHYSICIANS OF PHILADELPHIA; SECTION ON MEDICINE.

Meeting, Friday evening, February 26, Dr. James E. Talley, in the chair.

The vonNoorden Treatment of Diabetes Mellitus. Dr. James Tyson: I have selected this subject because the administration of the newer dietetic treatment for which we are largely indebted to von-Noorden has resulted in a complexity, trying to doctor and patient, and I thought I might be of service in simplifying it. It will aid me in my purpose to follow Naunyn and v. Noorden and subdivide diabetes into three rather arbitrary divisions: (1) Slight or mild cases; (2) transitional or semi-severe; (3) really severe cases. There are many mild cases which may be so controlled that the patient is practically as well off as if nothing were the matter. v. Noorden claims that not enough stress is laid on the requirement that to insure success sugar must be kept permanently absent from the urine and even transitory reappearance must be avoided if possible.

Treatment consists in the strict elimination of carbohydrates from the food. This rests the "sugar factory" and gives opportunity to recuperation and resumption of function. When sugar is not removable by the simple carbohydrate diet, v. Noorden resorts to reducing the proteins in addition to cutting out the carbohydrates and to employing the so-called "oatmeal cure" as an additional measure. In these cases brilliant results are sometimes obtained by interposing periods of diet composed exclusively of oatmeal or some similar food accompanied and followed by two or three days of vegetable food and eggs. For never more than three days in succession should the oatmeal diet be used. "Fats are burned in the fire of the carbohydrate" is a statement not altogether correct, but one which emphasizes the fact of the dependence of acetone metabolism upon carbohydrate metabolism. Alkalies and especially sodium bicarbonate, neutralize but do not prevent the production of acetones, diacetic acid and oxybutyric acid in the blood. v. Noorden gives one half to two thirds of an ounce of sodium bicarbonate in a day. I seldom give more than a dram or a teaspoonful three times a day. In nearly all cases in the presence of decided acidosis I give them nearly continuously. The citrate of potassium and sodium are more palatable than the carbonate and are less disturbing to the stomach. In the diet in incipient coma all restrictions except pure sweets are removed. The free use of milk, six to eight ounces, every two hours is recommended by some. If obtainable sugar-free milk may be used. v. Noorden claims that he has tided over cases by an exclusive diet of oatmeal preparations. He advises no food, but large quantities of whisky well diluted, three to five ounces daily. These alcohol periods are continued for one to two days, followed by milk and oatmeal soups with a gradual return to the diet of chronic diabetes.

Opium, chloroform and ether increase the acidosis. Medicines in the earlier stages of diabetes have little value and less in the later stages. Certain mineral waters have a reputation. Their operation is probably similar to that of the sodium carbonate already described. They should be taken freely. An important measure in the treatment of diabetes is rest, especially in bad cases. Efficiency is easily shown by urinalysis before and after a rest of a couple of days in bed.

The Diagnosis of Enteroliths by Means of the Roentgen Rays; with the Report of a Case, by Drs. George E. Pfahler, and C. J. Stamm, was read by invitation and illustrated by lantern slides. The paper was a report of a case of an enterolith of about one and one half inches in diameter, which was first recognized as a movable body in the abdomen, and thought to be a movable kidney or a mesenteric gland. By roentgen examination it was determined to be an enterolith, located in the cecum and capable of moving from the pelvic cavity to the crest of the ilium. By the use of glycerin and olive oil enemata and abdominal massage it was moved from the cecum to the rectum and then removed by the finger. It is claimed to be the first case to be diagnosed before operation or autopsy, and the first large enterolith to be removed without operation.

THE PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting of February 2, Dr. George M. Coates in the Chair.

Systemic Infection of Middle-Ear Origin in the Exanthemata was, by invitation, presented by Dr. Charles R. C. Borden of Boston, Mass.

Dr. B. Alexander Randall, in discussing: I wish to support very heartily all the major points Dr. Borden has brought out. There are some points in the difference of treatment which may seem small matters. I have before now insisted upon the element of prevention of otitis media in exanthemata. It was from Pepper I learned it. I have always a cap in the treatment of a case of exanthemata. By putting a protection over the ears, we save many cases from ear involvement. I most cordially agree with Dr. Borden in regard to the ice-cap; I never use it. Without a single exception I have used hot application or hot water-bag. I do not use cold on the mastoid, use dry heat, hot douching, glycerin, anhydrous. The point about the nipple-shaped perforation is well taken in respect to adult cases, but except in cases of very destructive active infection I think you will agree with me that this form of perforation is in the early days of childhood, and in adult cases marks a dangerous point. In a young child the nipple perforation is the rule and leaves no scar when it has opened. The incision is a poor dependence. The use of the biting forceps will greatly facilitate matters. Divulse the opening, do not incise through the opening but peripheral to it. Mastoid empyema is a three-fold cavity consisting of the tympanum proper, the attic and the antrum. Empyema of the mastoid is filling up of mastoid cells.

Every case must be judged on its own indications. I advise against following my advise in some of these points, but you must have experience to go against a rule. Cases when ready for operation often show no indications at all. I do not wait an hour after I feel that the case must be operated on. Often I wait for days if I think the patient can be brought through without an operation.

The use of camphorated oil and hot saline enema are very useful. I have seen many cases clear up by the use of hot saline enema.

Dr. S. S. Woody: The paper of Dr. Borden's has been very gratifying for many reasons especially because of the radical stand taken by Dr. Borden. In diphtheria, otitis media occurs about one third to one fourth as often as in scarlet fever. Mastoid disease as a complication in diphtheria is very rare. In scarlet fever otitis media plays a more important rôle. Otitis media is found in ten per cent. of all the cases of scarlet fever. Of this ten per cent., three per cent. will develop mastoiditis or mastoid disease. One third of the middle-ear diseases following scarlet fever have discharge as the only symptom. Middle-ear disease is a possibility and should be borne in mind always when handling a case of exanthemata. Paracentesis should be done at the earliest possible moment. In a case of otitis media following scarlet fever I favor conservatism because of the fear that if an anesthetic is given we may have shock and make the patient worse. I have always felt that operation should be delayed until some incision through the periosteum over the mastoid is made. If, however, we find any carious bone the aural surgeon should be called in.

Dr. S. MacCuen Smith: Dr. Randall has stated that he is conservative; I am considered radical. Dr. Randall's conservatism is due to the individual case. If we two were to see the same case together we would treat the case the same way. In a case of empyema of the ear cavity, it is difficult to find out whether the mastoid is involved. Is it a simple empyema or some bone caries? I would operate earlier than Dr. Randall, and would thereby save some of the complications and hearing in after life. Many cases of catarrhal otitis media are started by these early attacks and neglected cases of acute suppuration. In all cases of exanthemata the ear should be examined freely and frequently; not to wait until you have had the symptoms. I agree with Dr. Randall that in every case of middle-ear disease the accessory sinuses are involved.

Spontaneous rupture of the drum head *versus* early incision is particularly true of middle-ear diseases complicating exanthemata. In the latter case the greater majority that require operation have had spontaneous rupture. Sometimes the coat is a long time rupturing. Owing to the increasing fluid you will get an involvement of the mucous membrane which actually becomes detached and exposes the bone. If the drum head could have been incised early all of this would have been prevented. The ear should be examined frequently with the view of determining whether there is ear involvement, and in cases involving exanthemata the ear drum should be incised early. The drum head should be incised freely and avoid incising frequently. I would like to call Dr. Borden's attention to one symptom that is one of our unfailing symptoms and one which is usual—bulging forward in the posterior wall. When this is present it is a usual sign of ear disease which requires a mastoid operation.

Dr. Borden has spoken of contagion of the discharge. At Jefferson Hospital whenever they have scarlet fever, etc., in the children's ward they put the blame on the ear department. I perfectly agree with Dr. Borden in the use of the ice-bag with the exception of cases beginning acute mastoiditis. In these cases the ice-bag is worth something; the mistake is that they are kept on too long; they should be kept on from twenty-four to thirty-six hours and once taken off should never be put on again.

Dr. Stauffer: Most of the cases of mastoiditis have not shown symptoms of mastoiditis. Every case of middle-ear disease has pus in the mastoid antrum. Dr. Borden has set a good example in operating early. He is to be commended upon this. Ether is a stimulant and not obstructive. Bacterins are not of much value in ear conditions. I can not agree with Dr. Randall in that he does not use the ice-bag. I agree with Dr. Smith and use it in early stages. When is a case of empyema of the mastoid to be operated on?

Dr. McKenzie: Dr. Borden has spoken about the surgical department referring cases to the ear department in cases of fracture of the skull. The point which the Doctor tried to bring out most was that cases in exanthemata with a kidney involvement show a clearing up of the kidneys if the mastoid is operated on when the mastoid is involved. In this I think he is correct.

I would like the Doctor to tell us as to how many cases of scarlet fever have kidney complications without ear complications; how many have ear complications without nephritis and how many have both. Deaf mutes give a history of measles more often than scarlet fever. Fistula through the cortex is an indication of late symptom of mastoid. If you do find this the mastoid is of some duration. I can not agree with the Doctor. I have found this condition quite early.

When I have made a diagnosis of mastoid empyema, I do not wait. Many times when symptoms are mild and we operate we find a bad condition. My motto has been: In case of doubt operate; in cases of suspicion, operate. A certain proportion might have gotten well without operation. I do not feel quite safe in letting them go. Hot applications work well in the majority of cases. The way the child takes to heat or cold should be considered. The patient often gives us the best indication as to which should be used. Some cases do well by the alternate use of the two.

There are many cases of mastoiditis where the symptoms are very slight. The worse cases are those which are not the frank ones. The patient may even have a subnormal temperature.

Dr. Stauffer: I simply want to emphasize the point Dr. Borden brought out about vomiting in middle-ear diseases, in children especially.

Dr. Stout: Will the Doctor kindly tell us what is the condition of the hearing after operation?

Chairman: I believe in the use of vaccines in certain cases. By the use of autogenous vaccines healing is not delayed. Bacterins are used to reduce the time in drying ears. In regard to prophylaxis, the only way to prevent them is to take out the adenoids as Dr. Borden mentioned. The number of cases of acute otitis media has decreased. Dr. Borden, as I understand does the simple mastoid operation for the following reasons: (1) To preserve the hearing by draining the ear; (2) to reduce time of running ear; (3) to relieve pressure and relieve danger of infection.

Dr. Borden: When you wait eight or ten weeks for the symptoms to subside, what has happened to the hearing? If you see the case six weeks later you will say nothing has happened. Later in life however the patient will not hear at all. This is one of the great reasons why this radical operation is of great importance.

I am inclined to believe that there are different results in different cities because of difference in climate. In the South they do not have as many mastoids as in Boston. We would rather have these troubles in the summer time. Dr. Woody spoke of the rareness of mastoiditis in diphtheria. I have seen a few cases and have had no symptoms at all. In adults forty per cent. having middle-ear conditions develop mastoiditis. A patient who goes through measles without any active symptoms of mastoiditis does not develop it.

The anesthetic is not a great danger. No troubles result. It acts as a stimulant. You do not know in what cell you will find infection. The hearing apparatus will not stand being bathed in pus and since mastoiditis is a slight operation, why should it be subjected to this danger? After operation vaccines may help. Long paracentesis is no better than short one. It makes no difference whether the incision is one fourth or one eighth of an inch, you will have a perforation the size of a pin head. ROBERT F. RIDPATH, Reporter.

THE PHILADELPHIA POLYCLINIC OPHTHALMIC SOCIETY.

Meeting of February 11, at which a symposium on "Myopia" was presented.

The Causes of Myopia. Dr. W. W. Watson said that the causes of myopia were to be found in the habits that civilization had fixed on man. All changes that lead to myopia, however, were not attributable to close use of the eyes. He arranged several classifications, a variety either congenital or acquired, and a division of causes into anatomical, mechanical, inflammatory, constitutional and traumatic. The congenital form does not signify that near-sighted children are the offspring of myopic parents, but a tendency under the laws of heredity by which a child inherits from its parents, and more especially myopic parents, the peculiar conformity of skull or weakened tunics of eyes that predispose to its development after birth. Myopia in the embryo by hyperinclusion of the mesoblastic vitreous into the secondary optic vesicles is uncertain, and the congenital inflammatory types are rare. Myopia exists where parallel rays entering the eyes focus anterior to retina, therefore it occurs when the anteroposterior diameter is disproportionate to the refractive power of the dioptric media, or when there is unusual excessive curvature of lens as in cataract formation, or of the cornea as in conical cornea. With anatomical causes are placed imperfections of orbit development in the vertical diameter, and the low orbit producing by muscle pressure posterior bulging of globe. Also the shape of skull and the size and conicity of the orbit are here considered. Broad heads give wide-set eyes, and shallow deep orbits promote resistance to ocular movements and an anomalous arrangement of the rectus muscles whereby, on extreme convergence, lateral compression of the globe is produced. This extreme convergence is brought about by demands of civilization, occupation, poor lights in school and workhouse, and small type in print. Associated with this excessive convergence is the excessive accommodation which is in turn encouraged by near vision, for near vision while theoretically possible without much accommodation in the myope is not usually accomplished. Therefore myopia uncorrected by glasses is a contributing cause to the progressive form. Next in importance was mentioned the inflammatory causes which move toward a devitalization of the tunics and consequent stretching of the eyeball. Contributary are iritis, cyclitis, choroiditis, scleritis, inflammation of adjacent tissue, infectious fevers, diabetes, and interference with the choroidal circulation by pressure on the venæ vorticosæ.

Among other causes Dr. Watson mentioned mild ectatic cicatrices; unusual short optic nerve; alterations of vitreous, changing its index; sclerosing of the crystalline lens; luxation of lens, while, last but not least, he referred to uncorrected astigmatism by reason of its strain on the ciliary muscle with an enduring irritation.

The Prevention of Myopia. Dr. Luther C. Peter: It is generally conceded that ninety per cent. of myopes are due to acquired causes; however, that the ninety per cent. can be prevented. It is difficult to measure just how much one can do to prevent myopia. Donder classifies myopia into three groups: First, stationary; second, temporarily progressive; third, permanently progressive. In the latter group are included the malignant types. The prevention of myopia resolves itself into a question of hygiene: First, hygiene in the home; second, hygiene in the school; third, industrial hygiene. In home hygiene, such measures as will help the child's general health are essential. Roemer likens the conditions to rickets, and uses the term "scleral malacia," to express the condition. It seems to me this term is very appropriate. In children, therefore, with myopic tendencies, it is essential to pay strict attention to home hygiene, as they inherit the same tendencies and habits which made their parents myopic. Anything that will improve the children's general health is to be encouraged.

Dr. Samuel Risley has called attention to one of the great factors in the development of myopia; that is, astigmatism. It is not unusual to see these cases pass from hypermetropia to myopia by the astigmatic route, or as Dr. Risley expresses it, "through the turnstile of astigmatism." I believe that astigmatism has more to do with the development of myopia in the first and second of Donder's classes than any other factor. Mixed astigmatism is but an expression of the same tendency, as mixed astigmatism primarily resolves itself into simple hypermetropic astigmatism. It is a well-known fact that children are born hypermetropic and remain so through life. Myopia is therefore a condition of civilization.

In home hygiene, aside from the general management in the bringing up of the child, I do not think there is anything especially indicated except the care in home work and the age at which the child shall be sent to school. Home study is not indicated in the average child until it is twelve years of age, and children with myopic tendencies should not be sent to school until they have reached the age of eight years. Every school child should have its vision taken accurately at least once a year, and efforts should be made by competent persons to determine the presence or absence of astigmatism. These measurements should be made by an ophthalmologist. If astigmatism is present, it should be corrected. The spheric element is not of so much importance at this time of life as the astigmatic error.

Myopic children should have special classification in the school. Their time spent in the school room should be limited and the amount of work required of them should be limited. It is a well-known fact that the most progressive period of myopia is from eight to fifteen years; and if the proper care is taken of the child during this period, the progress of myopia can undoubtedly be arrested.

Industrial hygiene is a matter of education and training. While the average manufacturer is not a humanitarian, he has enough of the humanitarian spirit, when coupled with the usually astute business foresight, to accomplish the object of the betterment of the condition of the employed without intervention on the part of the physician. The modern factory is built with due consideration for the employed. I believe, however, that there should be a minimum standard of visual acuity in order to obtain the best results. Employés whose vision falls below this standard should be required to wear glasses.

The Treatment of Myopia. Dr. George S. Crampton drew attention to the fact that a solution of the proper treatment had been largely reached when due consideration had been given to the etiology of the condition, together with the institution of certain hygienic preventive measures known to successfully combat an increase in the defect.

While a careful refraction under a reliable cycloplegic, such as atropin, should first receive attention our responsibility does not cease here, but our efforts should be directed toward correction of faulty habits of the patient. We know the myope to be of the student type, the child who prefers to continue with his books during the recess hour in preference to joining his playmates in the vigorous sports which require clear distant vision. In the progressive types of myopia it is well to prevent all tendency to a stooping position by supporting the printed page in a vertical manner but little below the level of the eyes and the patient should live under conditions removed as far as possible from the confining influences and literary environment of civilization. The balance of the extraocular muscles should be determined and the myopic tendency to divergence, if present, should be combated by muscle exercises or in certain cases by prisms or operative measures, if indicated. The blood and urine should be examined in a search for treatment indications, and the diet should receive attention in order that everything possible may be done to increase the general vitality and muscle tone. A tendency to constipation if present should not be overlooked.

Risley, who, in 1881, examined a large number of the eyes of children in the Philadelphia schools, concluded that, given an emmetropic eye, no harm would follow the educational process if proper hygienic measures were adhered to.

That improved hygiene, together with the benefits of a prompt correction of the refractive error, is bearing fruit can be judged by Widmark's experience in Sweden where he found a reduction in the number of myopes in the schools from about forty per cent. of all those examined in 1880, to nineteen per cent. in 1908.

In London Harman found less than eight per cent. myopic after the first five years of school life, but there was a decided trend from hyperopic astigmatism to myopia as time went on, indicating that hyperopia was passing over into myopia.

Weeks divides myopes into three classes: (1) Those to whom full correction may be given for all purposes. These are the cases in which not more than two thirds of the accommodative power will be employed in close work when glasses are worn, the necessity for undue convergence being thus lessened. (2) Cases in which a full correction for distance can be used with comfort but whose reserve accommodative power in doing close work should be less than one third. These cases must have weaker glasses for near work than those worn for distant vision. (3) Cases in which the glasses for near vision only can be worn with comfort. These are the victims of high myopia in whom the p. r. is extremely close to the eyes. In these cases the full correction so reduces the size over that to which the patient has been accustomed, that the benefits of clear distance vision are more than outweighed by the annoyance occasioned. Glasses that will remove the p. r. to the ordinary reading distance, will often be worn with perfect comfort and will be preferred for all distances. A special glass may be provided for occasional use when clear distant vision is desired.

When myopia of high degree has been long neglected it is sometimes found that only a poor approach to normal vision can be had with glasses. This is generally due to choroidal changes following the stretching of all the coats of the eye, but cases are occasionally found where the nerve has become atrophic and of course we are more or less helpless to improve the condition. Glaucomatic symptoms are also occasionally found in the long eye of myopia and when discovered should be treated with miotics.

Eyes previously emetropic have been known to become myopic during an attack of glaucoma and have returned to normal after iridectomy. Much has been written in recent years in favor of lens extraction in myopia of high degree, the preferred method of operation seems to be free discission, followed after one or two weeks by evacuation of the lens substance. Apparently no one advises operation in errors less than fifteen diopters and most authors prefer to reserve operation for cases of a still higher error on account of the resulting hyperopia.

A Few Cases Illustrating Ocular Symptoms in Nervous Diseases. Dr. John H. W. Rhein, by invitation: Case 1. A man of forty-eight presented nothing of interest in the family or personal history except that he had had spinal meningitis. In 1910 he consulted an oculist for double vision from which he recovered. He remained well until September, 1913, when double vision returned and he complained of pains in his feet. On examination it was found that his knee jerks were normal, his station good, the finger-to-nose test was performed perfectly well, all forms of sensation were intact and there were no bladder or rectal symptoms. He was referred to the eye department which reported slight palsy of the external rectus only at that time. I did not see him again until comparatively recently when I found upon examination that his pupils were irregular, that left pupil did not respond to light, and right one only sluggishly. There was also a palsy of the left inferior rectus and left ptosis, otherwise the examination was entirely negative. Wassermann reaction on several occasions was negative and I believed I was dealing with a case of non-specific Argyll-Roberston pupil. A number of cases showing Argyll-Robertson pupil have been reported in literature. Felix Rose collected a number of these cases and published them in the *Semaine Medicale*, December, 1912. Only recently I obtained a faintly positive Wassermann reaction in this case and under iodids and mercury the ptosis disappeared and the double vision has almost disappeared. There has been no change, however, in the Argyll-Robertson pupil.

Case 2. This case is shown mainly on account of one symptom which is present, namely, hemianopsia. He applied, April, 1914, to the clinic with the history that a few months previously he suffered from an attack of paralysis of left side of the body. When he was examined at the clinic the paralysis had entirely disappeared so that he could use his hand in his work and he walked without any evidence of paralysis. The tendon reflexes were increased on both sides and more so on the left. The symptom in this case which was especially interesting was the persistent pain of which he complained in the left arm, leg and face. This led to a diagnosis of hemorrhage into the optic thalamus, which was confirmed by the report from the eye department that he had a hemianopsia. He did not have a typical thalamic syndrome, however, there being no hemiataxia, hemiathetosis or sensory disturbances. This case is an example of central pain. The most frequent seat of injury in these cases is the optic thalamus, although the central pain may be present in injury to other parts of the brain.

Case 3. This is a case of major hysteria. The eye symptoms consisted of hysterical amaurosis, hysterical unilateral ptosis, monocular polyopia and tubular fields. In addition to this she exhibited hemihypalgesia, paralysis of the anterior tibial group of muscles on the left side and cataleptic attacks. All these symptoms were cured by hypnotism except the polyopia, which still persists. The subject was a girl of fourteen.

Case 4. Patient showed hysterical symptoms mainly on the part of the psychic sphere. She has a morbid interest in her physical sensations, daily has some new symptom consisting of either pains in various localities or believes she has cancer, typhoid fever, some obscure stomach disturbance or what not. She has hemihypalgesia but otherwise her physical examination resulted in normal findings. On the part of her eyes, she showed marked contraction of her fields of vision with weakness of the muscles of the eye giving rise to double vision. Professor Reber reported that she had seven degrees of hyperphoria. All of her symptoms are improving under treatment.

Dr. Samuel D. Risley, in discussion, said that he agreed in most respects entirely with what had been said. There is no chapter in ophthalmology which requires more close work and good judgment than myopia. Before I published the work on "School Hygiene," I had a number of cases in which I myself had seen the astigmatism increase. I found them to have a static myopic refraction. I published them in order to fortify the statistics. You are all familiar with the findings of that report in a general way, and after all these years I have seen nothing that would cause me to change a single thing in that report. The gratifying part about it has been that there has been a steady dropping off in myopic eyes, eyes which had been blinded in choroidal atrophy, etc. I think our management of the medical science in these cases has been of more importance than all the operations we have performed. There are many things to be taken into consideration in the treatment of myopia. The myopic eye is a sick eye. They have fluffy eye grounds and dilated arteries. They are uncomfortable, particularly in a way we do not stop to consider. A myopic eye with astigmatism upsets the balance between the eyes, not only the accommodation but it upsets the range and convergence. And it is this fact, I believe in many cases that accounts for the nervous symptoms we see in patients with this kind of eyes. Therefore I believe cycloplegia should not be used for only an hour and the patient then refracted, but day after day until it often goes into weeks, and having quieted the choroid down by subjective methods, then prescribe glasses. I could relate case after case in which after the vertical deviation was corrected the difficulty disappeared at once.

Dr. William Zentmayer said that while he advocated the full correction of myopia, there are individual cases in which it is either unwise or impossible to follow this procedure. As an illustration of the first he cited cases in which there were myopic changes in the fundus and sick, irritable eyes. In these cases it will often be found that patients are much more comfortable with a partial correction, which gives less bright images. He gave the notes of a patient in whom the expedient of giving a partial correction instead of the full correction, which the patient had been wearing, changed her from a recluse to a useful individual. Finally, myopes with considerable esophoria are often more comfortable with a partial correction. As an illustration of the second, he cited cases of patients with moderately high myopia who had reached the age of twenty-five to thirty before taking to glasses. These patients rarely can wear full correction with comfort because of deficient accommodation power. Dr. Zentmayer agreed with Dr. Peter that the accommodative act was not the most important factor in causing increasing myopia. Hypermetropics of considerable degree are compelled to use excessive accommodation but such eyes rarely show the changes met with in the stretching eyes of progressive myopia. Again myopes of 2.50 to 4 D., often use their eyes for near work without glasses and consequently without accommodation, yet such eyes may develop progressive myopia. There is some factor besides the intra- or the extraocular tension underlying progressive myopia, possibly a malacia of the tunics, sometimes inherited. Walter W. Watson, Secretary.

COUNTY SOCIETY REPORTS.

ALLEGHENY—March.

The regular monthly meeting of the Allegheny County Medical Society was held in the Assembly Room, Pittsburgh, March 16.

The entire evening, aside from the time taken up by the business session, was given over to the discussion of legislation pending in Harrisburg. Since any discussion of legislative matters would be incomplete at this time without something being said concerning the recently effective Harrison Law, this too was gone into at considerable length. The Antivivisection Bill now before the Legislature made an opportunity for the society to have the privilege of a talk from Rev. Dr. J. Leonard Levy on animal experimentation.

The scientific program was opened, however, by Dr. J. A. Hawkins who presented a synopsis of the Harrison Bill, saying that the profession seemed to be unnecessarily alarmed over this act which was not at all a new proposition. Dr. Hawkins said that in his opinion Senate Bill No. 198, now before the Pennsylvania Legislature, is a much more drastic act and is so worded that it would make it necessary for a physician to write a prescription and wait for it to be filled before he could give a hypodermic of morphin. This was probably not the intention of the framers of this bill but it provides that a physician may buy all of the proscribed drugs he wishes, but gives him no authority to use those same drugs. The Harrison Bill exempts physicians from the restrictions in the use of contraband drugs, but this bill does not have one word to this effect, according to Dr. Hawkins.

Dr. Hawkins called attention to other bills now before the Legislature, namely a "bill to repeal the compulsory vaccination act," a "bill to create a chiropractic examining board," a "bill to regulate the sale of heroin" introduced by Mr. Stein of Pittsburgh, a "bill licensing to practice all osteopaths now registered." House Bill No. 385 which aims to establish a licensing and examining board for the practice of "drugless therapeutics" was so amusing in its generosity that Dr. Hawkins read a number of clauses from the bill. "Drugless therapeutics" was defined by this bill as any treatment having for its base the spine, air, light, water, etc., and if there was any fad from New Thought to "Indian healers" left out by the framers of this bill it was an oversight which they made a desperate attempt to remedy later in the bill by adding the clause "and any treatment now in existence or which may come into existence."

Dr. Adolph Koenig opened the discussion by saying that the Bureau of Medical Education had done a good thing in licensing chiropractors since they are now compelled to live up to a certain behavior. They are now regulated but they do not want to remain under the jurisdiction of the bureau and are trying to establish a bureau of their own. Dr. Koenig expressed himself as being opposed to raising money for the purpose of fighting legislation no matter how obnoxious.

Dr. J. M. Thorne continued the discussion by pointing out various weak points in the Harrison Act, which he nevertheless considers a great moral issue which should not be criticized at any length. He stated that the exemption clause which permits druggists to sell without record paregoric by the pint or, unlimited amounts of solutions containing not more than one fourth of a grain of opium to the ounce, was not originally in this bill and he intimated that workings of the patent medicine interests were evidenced in the introduction of this exemption clause.

Senate Bill No.198 (Gerberich Bill) was discussed in its legal phases by W. A. Challener, Esq. Mr. Challener doubts that Dr. Hawkins' view that a physician may not dispense proscribed drugs under this act is correct. It seems to him that the provisions of this bill are not directed against physicians and it has always been a physician's right to dispense drugs. In order to settle any doubt, however, Mr. Challener believes that the bill should be so amended that there will be no question as to interpretation. In going before the Legislature, Mr. Challener advised that physicians should do this with the viewpoint that this bill is a good one but should be made even better by making the exemption clause for druggists much stronger than it is. Concerning the Harrison Act about which a question had been brought up as to the keeping of records, he said that a good rule to follow was "when in doubt, make a record."

Rev. Dr. J. Leonard Levy in opening his talk on "Vivisection," said that he had just been quoted by a member of the Legislature, as being opposed to animal experimentation and in favor of the Antivivisection Bill so that he welcomed this opportunity to correct that statement, which was quite wrong. Dr. Levy was asked to go to Harrisburg and appear in connection with this bill but when he told the man who asked him that he favored animal experimentation, the man said, "Then you'd better not come."

Dr. Levy said that Jews had long been known for their kindness to animals and indeed for their efforts to prevent cruelty to animals. According to some of the old precepts of the Jewish Church certain regulations must be observed in regard to the killing of animals. It was taught at one time that if there were a nick in the blade of the knife used for the killing, so small as to be invisible to the naked eye and perceptible only to a man running his finger-nail over the edge, the meat of animals killed with such a knife was unfit for Jewish consumption because the flesh had been torn and needless pain inflicted. One can not but be amazed however at the attitude of men and women opposed to animal experimentation when one considers some of the grounds for their opposition.

It is impossible to imagine a world free from pain. No child takes food in the first place unless it is impelled to do so by the pain of hunger. A child learns to walk upright because falling is painful, but one does not criticize a God who made a painful universe.

Dr. Levy said, "I protest against the implication that sentimentality is sentiment, and my view of the question may be expressed by an epigram: If I believed that the destruction of every dog in the universe would save the life of a little child, I should be impelled to allow it—to save the life of an embryo Jesus or embryo Moses.

"We all desire to remove all unnecessary cruelty but antivivisectionists are inconsistent. They do not object to eating the flesh of their 'fellow-creatures.'

"The attack on syphilis is wonderful enough to more than justify 'vivisection.' In seven years from the time that Metchnikoff first inoculated an ape with syphilis Ehrlich discovered salvarsan. In seven years, more was accomplished than in centuries of bedside clinics.

"Twenty-five years ago ninety-three per cent. of patients attacked with diphtheria died of the disease. At the present time of the cases of diphtheria taken under reasonable conditions practically none die if treated with antitoxin, a result of animal experimentation."

Dr. Levy said that if men and women by millions believe that God accepted a blood atonement on the part of His Son it ill behooves individuals to oppose animal experimentation when it has already proven such a boon to mankind and when it is definitely known how greatly the cause of medicine would suffer from its restriction.

Dr. Levy was a chaplain in the United States Army during the Spanish-American War and he spoke of the hundreds of deaths which occurred at that time from typhoid fever, contrasting it with the incidence of typhoid during the recent mobilization of troops on the Mexican border. In this latter instance only one case of typhoid fever occurred and that one was said to be a teamster who had not been inoculated against typhoid as had the others.

In the Franco-Prussian War, Dr. Levy said, smallpox ran like a scourge through the French army but the Germans who had been vaccinated against smallpox scarcely noticed it.

Mr. A. C. Stein, who introduced the Antivivisection Bill now before the Legislature, was present and upon being asked to address the meeting said that he had quoted Dr. Levy as favoring his bill because he had been assured upon good authority that Dr. Levy did approve of the measure. He had been surprised to learn otherwise but, although he was influenced to introduce this bill by this and similar assurances from the same unimpeachable authority he did not offer to withdraw his support of the measure. In fact Mr. Stein said he was not familiar with the real import of this bill when he introduced it.

Mr. Stein brought a peace offering to the medical society in shape of the news that the Legislature had just voted to provide quarters for the society in the Court House or some other public building, but then went on to offer in favor of his Antivivisection measure the time-worn argument that the antis do not want to do away with animal experimentation but that they merely desire to put a stop to unnecessary cruelty as well as to do away with needlessly cruel experiments. Mr. Stein has seen with his own eyes photographs of horrible examples of needlessly cruel experiments!

He did not care to express an opinion on the Antivivisection Bill but inasmuch as he had voted against similar bills on two previous occasions he might possibly be impelled to vote against his own measure this time. At any rate he "wouldn't offend any of the physicians living in his district for anything."

Dr. Levy after listening to Mr. Stein asked for the privilege of the floor for a moment more and paid a touching tribute to "the tender-hearted Mr. Stein," as he expressed it. He then made the excellent suggestion that laymen and not doctors should be sent to appear before the Legislature when this and similar bills come up. The reason for this is that antivivisectionists are invariably laymen and when a physician appears on the other side he is read out of court for pleading for himself.

It might be said in passing that no more eloquent advocate of this important cause could be found than Dr. Levy himself and he expressed to the meeting his willingness to be of assistance in any way possible.

Dr. Theodore Diller read a short paper which had to do with the "Need of Amending the Present Laws on the Commitment of the Insane." He pointed out the liability to law-suit undertaken by every physician who signs a commitment paper, as illustrated by a recent suit brought against Dr. Wholey and Dr. Cohoe of this city. He said that as long as such a possibility existed physicians were not justified in committing patients to asylums. The procedure should be changed and could readily be so changed by arranging for the appointment of a lunacy court or commission. This court could hear the evidence for commitment and a court order could then be made by the presiding judge. Thus a physician would have no more responsibility or liability in the matter than a juryman serving on a jury which had brought in a verdict of guilty in a murder case. An emergency commitment could be arranged for the contingency that a judge could not be found readily in certain districts.

Paul Titus, Reporter.

BERKS—March, April.

The Berks County Society met at Reading, March 9. Dr. Clara Shetter-Keiser read a paper on Cycloplegics." A cycloplegic drug temporarily paralyzes the ciliary muscle; a mydriatic temporarily dilates the pupil. Atropin dilates the pupil and paralyzes the ciliary muscle, cocain dilates the pupil but does not paralyze the muscle. Cycloplegics especially duboisin and hyoscyamin, when carelessly used may produce dizziness, dryness of throat, flushed face, hallucinations and even loss of coordination, but any of these symptoms soon pass away after the discontinuance of the drug if the patient is kept in a darkened room. These remedies should be dropped into the outer canthus while pressure is made upon the inner canthus to prevent the medicine entering the lacrymal duct. Cycloplegics should never be used where there is suspicion of glaucoma, and are seldom needed for refraction in individuals who have reached the age of forty-five. Time required for the ciliary muscle to recover its tone after the use of cycloplegics is approximately as follows:—

Atropin, begins in 4 days, complete in 15 days.
Daturia begins in 3 days, complete in 10 days.
Hyoscyamin begins in 3 days, complete in 8 days.
Duboisin begins in 2 days, complete in 8 days.
Scopolamin begins in 12 hours, complete in 6 days.
Homatropin begins in 12 hours, complete in 2 days.

Dr. Irvin H. Hartman of Reading read a paper on intubation for the relief principally of stenosis due to laryngeal diphtheria (membranous croup). Although this operation was devised, practiced and advocated by Dr. Joseph O'Dwyer of New York, as early as 1880, and perfected by him several years later, the measure did not meet with the expectations of the profession until after the advent of diphtheria antitoxin in 1893. The relief was often very temporary, due to the extension of membranes beyond the reach of the tube. With the use of the antitoxin and the usual consequent arrest of the disease, intubation has become much more practical and popular, the mortality being reduced in inverse ratio from about seventy-five to twenty-five per cent.

The reader emphasized the importance of intubating early before the diphtheria, but especially the carbon dioxid intoxication has become too marked. However no case should be denied the effort while there is any reasonable breath left, and the operation should certainly be employed more frequently. Four cases of intubation were reported with three recoveries. The vigorous administration of antitoxin, after intubation, must not be forgotten if it was not already begun beforehand.

The transformation, within a few minutes of a restless, struggling, anxious child gasping for air, into a calm, peaceful and comfortable one, seems like the work of magic and is one of the most satisfactory experiences a physician can realize. The tube is usually retained from three days to a week. One patient coughed up the tube the fourth day and did not again require it. The advantages of intubation over the older operation of tracheotomy are so many and so self-evident that the latter operation should not be considered unless intubation is impossible or fails to afford relief. These advantages were so clearly summed up by Dr. F. E. Waxham of Chicago in 1885, *Journal of the American Medical Association*, Vol. v., page 469, that we take the liberty to reiterate them here. (1) With a little dexterity and practice it can be easily and quickly performed and without danger, (2) The patient is not mutilated and disfigured, (3) There is no wound to cause shock or to become the source of septic infection, (4) The tube can be worn much more easily than the ordinary tracheotomy cannula and coughing and expectoration are just as easy, (5) It does not require the close care of a tracheotomy, (6) The air, before it reaches the lungs, is warmed by its contact with the upper air passages and is not so likely to cause bronchitis or pneumonia, (7) Parents will consent to tubing much more readily than to tracheotomy.

"The Story of Spectacles" was presented by Dr. C. W. Bankes. Civilization is making us near-workers in greater and greater numbers and we are becoming a bespectacled nation. Statisticians tell us that more than ten million inhabitants of the United States wear glasses. Even three per cent. of the first-line soldiers of the German Army have glasses while in the Reserves it runs up to ten per cent. Among those members of the society present the percentage is fifty. As a matter of fact every mother's son and daughter of us who lives into the third score years of life, be the eyes ever so perfect, will require lenses for near work.

In the early diary of the world hieroglyphics never tell us that any Pharaoh or Rameses had a royal spectacle maker. We never heard that Caesar made a one-day trip to his oculist. The Assyrians, Babylonians, Egyptians, Greeks and even Romans never possessed the art of making glasses. Glass itself dates from the beginning of things and the perfection of cutting and carving in the ancient gems demanded some means of magnification. The Greeks used the "shoemaker's globe," a glass sphere filled with water, to magnify and to ignite combustible bodies. Its power was a mystery ascribed to the water and not to the shape of the glass. This was a part of the armamentarium of the physicians. The Romans borrowed it from the Greeks.

The honor of having been the first inventor of spectacles or glasses is divided or disputed rather between Armati and Spina, Italians who died about 1315, the Englishman Roger Bacon of about the same time, and the Chinese of a possible earlier era. The first unsightly devices were ridiculed and their value was slowly recognized. Before 1600 the action of light was a mystery and physicians and clergy advised against the use of glasses with few exceptions. Convex glasses only were made until the sixteenth century and cylindrical lenses for correction of astigmatism did not appear until the nineteenth century was well under way. Ben Franklin invented the bifocal and the highest development of this is the invisible bifocal of this decade. Centuries were necessary for the production of the Punktal lenses of to-day, our ancestors of the thirteenth century wearing beryls, our grandfathers' pebbles.

Before the invention of the ophthalmoscope and the clearing up in great part of the relation of accommodation and vision by Donders and Helmholtz in 1851 a scientific examination of the eye was impossible. Now our attention should be centered upon the child. A stupid, obstinate, ignorant child usually means a negligent parent, and a neglected child usually means a stupid, obstinate and ignorant parent. Let us hope there will be fewer of such in the future and the world in a sense made brighter.

"Indications for the Operation of Tonsillotomy and the Technic as Performed in the Clinic at the Reading Hospital" was presented by Dr. Jesse L. Wagner. After stating diagnosis, symptoms and complications of adenoids and hypertrophied tonsils Dr. Wagner gave the indications for removal as follows: The necessity for removal depends not on the size but on the diseased condition as indicated by large crypts. While the high position prevents free drainage of the eustachian tubes, and a tonsil often considered harmless has a large amount of cheesy material. They should be removed when they interfere with respiration, articulation, eustachian drainage, when patient has frequent attacks of tonsillitis or has a peritonsillar abscess.

Objections made against removal are (1) nature placed them there for a purpose, (2) child will outgrow them, (3) removal interferes with voice, (4) tonsils will grow again, (5) hemorrhage. True they do atrophy between twelve years of age and puberty but still are dangerous and should be removed as any hypertrophied gland should be. Their removal may temporarily affect the voice but ultimately improves it. There are few fatalities from hemorrhage while there are many thousands removed. Among the causes of hemorrhage are hemophilia, fibroid tonsils, lack of fibrin, anemia, sex (more frequent in males), unusually large blood vessels, arteriosclerosis, injury to pillar, use of adrenalin and cocain. Out of 825 cases there were only two cases of serious hemorrhage.

Technic followed in Reading Hospital: Patient is etherized, after which the vapor of ether is used through mouth during operation. Tonsil is grasped by the tenaculum, cut by double knife then caught in snare which is contracted, one notch at a time; to restrict bleeding after tonsil is removed the fossa is packed by a gauze tampon. Tampon remains until the other tonsil is removed, after which the first tampon is removed. A towel saturated with ice water is placed around head. Adenoids are first loosened by adenotome, which is followed by the use of the curet. Two or three large tampons with strings attached are placed in postnares, which are removed one at a time. Ice compresses are continued at least one half an hour after the operation.

The Berks County Society on the occasion of taking over its new home held its meeting April 13, in the newly acquired Medical Hall. President Borneman, feeling that because of his efforts the chairman of the New Home Committee should preside, called upon Dr. Ira Shoemaker who took the chair, while Dr. H. F. Rentschler, treasurer, rendered the financial report.

Dr. James Tyson, Philadelphia, addressed the society. (See page 599.)

"The State Society and What it Offers to the Profession" was presented by Dr. John B. McAlister, Harrisburg, president elect of the state society. I fully appreciate the honor to be the guest of the Berks County Medical Society upon this happy and auspicious occasion. This society stands high among the societies of the state in influence and prestige. On behalf of the state society, I extend the congratulations and the felicitations of the state society upon the energy, loyalty and the enthusiasm which has made possible this new home. Your success is one of the rare achievements of the societies of the state. I believe it means the beginning of a new era for this society. An era of progress and growth of a new enthusiasm. This is your medical home, and next to your own house, this building should be your pride; this library should have your best thought, and the conduct of the society your interest and watchfulness. It is the duty of every physician to belong to a medical society. Medical societies give to the physician educational and professional advantages as well as important social and personal benefits. The society must be in line with the general progress throughout the country and must take up a studious consideration of questions applying not merely to the profession itself, but to society in general. We no longer think only of curing disease, but our first thought is rather to do all we can to prevent disease and to foretstall epidemics. As you have in the past, so you will continue to be advisers on all public health questions. As a society you are preëminently fitted to act as such advisers. Your voice should be heard whenever medical science can be applied to the public weal or an abuse of medical matters be found to exist. You can be a power in this community by your large membership; you can elevate professional character; you can mould public opinion; you can influence legislation and can promote measures for the relief of suffering and the protection of life and health. You are in your community what the state society is in a larger field and of which you are an important unit. It goes without saying that, in order to be effective in the world, any profession, trade or business must be organized, and its members must stand together. The medical profession is no exception to this principle. No organization can live or grow that is occupied exclusively with the question of maintaining its own existence. There must be some aim, something besides mere self-perpetuation to render any organization justifiable and valuable. In our state society we have a great organization, one that is justifiable and valuable. What have been a few of its achievements?

The medical society is the most efficient agent to extend medical knowledge and advance medical science. It has done most to educate the public upon matters of public health and sanitation. When we realize that only a few years ago did our organization start on this great problem of educating the people, it is wonderful the results accomplished in so short a time. The medical profession and the press should join forces for the public good. The medical society has been the most efficient agent in elevating the standard of medical education. The great majority of students from now on will be better qualified to enter on the study of medicine; and the public will have the assurance that the medical schools hereafter will turn out a larger proportion of thoroughly qualified physicians. The medical society has been the most efficient agent in securing the enactment and enforcement of just medical laws. The medical society has been the most efficient agent for protecting the public against fraud and quackery and incompetency; in protecting material interests of its members. As laymen become more intelligent regarding their own bodies and healthy living, it grows harder and harder for quacks and incompetents to mislead and exploit them. It is certain that in the life of the state society, the standard of qualification has been elevated; the social and legal standing of the physician in his community has been advanced; and the profession has been united to an extent that half a century ago would have been considered beyond the bounds of possibility. By general consent, it must be accepted that the state society has been the most potent and active force in accomplishing so much for the profession.

Finally, after all is said, it is the county society which ever must be the foundation and the support and give life to the state society. It rests upon the individual members to make the future better and better. This county society has an important duty to do, if you will make it such, and if you do you will realize that your labor will not be in vain, for honor and gain will redound for your work.

"The Advantages of a Library to a Medical Society" was presented by Dr. J. C. Wilson, president of the College of Physicians of Philadelphia. I wish to extend to you the greetings of the College of Physicians and of the Association of Medical Libraries. The advantages of the library are three, formation, maintenance and possession. In 1727 the Leather and Apron Club was formed with twelve members; for three years they met in a tavern, then at the home of a member. Benjamin Franklin suggested that the books be kept at a common meeting place where they and the members could be in harmony. There is a feeling of good fellowship in a common cause. Gifts and bequests help a library to grow apace and to become a power in a community. The formation of libraries is a help in acquiring knowledge, and a stimulation to the finding of traits of character, to breadth of view, and to clearness of vision. Intelligence must be cultivated, catalogues studied, and careful habits acquired in the studying of figures and dates. There should be a spirit of helpfulness regarding the needs of other libraries. Maintenance implies a sense of service which is educational. The advantage of possession is that books settle problems at once, which hitherto required much discussion. Fads should be represented. Libraries should be free to any one.

A banquet was held at the Berkshire at which about one hundred and fifty were present. A number responded to toasts. The guests included Dr. J. Torrance Rugh of Philadelphia and physicians from Lancaster, Lebanon and Schuylkill Counties. Clara Shetter-Keiser, Reporter.

DAUPHIN—March.

Dr. B. Franklin Royer, chief medical inspector of the State Department of Health, addressed the Dauphin County Society on March 2, on the subject of "Preventive Medicine in Pennsylvania." In the course of his remarks he pointed out clearly and concisely Pennsylvania's record in public health legislation and that the colony of Penn antedated similar legislation in Massachusetts by two years. The first act was adopted by the Colonial Council in 1700, following a severe epidemic of "Barbadoes Distemper" in 1697, and was entitled "An Act to Prevent Sickly Vessels Coming into This Government." Massachusetts passed a similar law two years later.

He further pointed out that all great advances in public health legislation in this Commonwealth followed severe and devastating epidemics of preventable disease. The first steps followed the "Barbadoes Distemper" or yellow fever epidemic in 1700; the second, a similar outbreak in 1774; modifications of the acts in 1793-4-5 and 6, and the act of 1818, following recurring outbreaks of smallpox or yellow fever. The epidemic of typhoid fever at Plymouth in 1885 resulted in the first State Board of Health, and the epidemic of smallpox in the city of Philadelphia, and later throughout the entire state, from 1901 to 1904, being responsible for the creation of the Department of Public Health and Charities for Philadelphia in 1903, and the State Department of Health of the Commonwealth in 1905.

After reviewing in considerable detail the public health machinery of the State Department of Health and the relation of the State Department of Health to local boards of health, he summarized the results of work in preventive medicine by setting forth with lantern slides the deaths and death rates each year from 1906 (the first year for which we have correct statistics in the state) up to the end of 1914, showing that if the death rate found in 1906 had obtained throughout the succeeding years, that more than 78,000 additional persons would have died. He further summarized the saving of life from four separate diseases, all of them strictly preventable, showing that there had been spared from typhoid fever more than 18,000 lives, from tuberculosis nearly 12,000, diphtheria nearly 5000, and whooping cough more than 5000, more than 40,000 of the 78,000 lives being saved from four distinctly preventable diseases.

The statistics of the commonwealth show that in cancer the number of deaths and the death rate seem to be steadily increasing, the rate for this disease in 1906 being 58.9 while for 1914 the rate is 72 per 100,000.

Members of the society were interested in his attempt to show the actual saving in money, by calculating the value of lives saved. Estimating the appropriations to the state and local departments of health during this time as $28,000,000 and $12,000,000 to other preventive medicine agencies, he found $40,000,000 expended in purely preventive medicine work, and calculating 75,000 of the lives saved at $1700 per life, he showed a saving of more than $127,000,000 in lives alone, an increase on the investment of 318 per cent., a clear profit of 218 per cent., to say nothing of the enormous saving in preventable illness and the wage-earning capacity of those saved from illness. His calculation showed that considerably more than 100,000 persons had been spared from typhoid illness, this saving alone repaying more than every dollar expended by the State Department of Health since its creation.

H. Hershey Farnsler, Reporter.

DELAWARE—March.

The Delaware County Society met at Chester Hospital, March 18.

Dr. Wilmer Krusen of Philadelphia addressed the society on "Some Points in Gynecological Diagnosis." Dr. Krusen showed that careful systematic examination of the abdomen, vagina, rectum, etc., was necessary to solve the mystery of the female pelvis, and that the various bimanual methods of examination were indispensable. Certain innate delicacies will often hinder a woman from early attention in these cases, but it is better by far for the physician to refuse to prescribe and so decline to be responsible unless a thorough examination is allowed; also, in many of these examinations the patients should be anesthetized, as no positive diagnosis can be made otherwise. It may seem unnecessary to first call attention to the early recognition of pregnancy, but the fact remains that many uteri are sometimes explored and curetted when pregnancy is the cause.

The early recognition of carcinoma of the uterus is absolutely essential to its successful treatment; it is very prevalent and results of treatment unsatisfactory; so insidious and once established so definite and direct that surgery is powerless to eradicate and medicine helpless to alleviate. The cervix uteri should be very carefully watched in suspicious cases and the failure of treatment and confirmatory microscopic evidence should be followed by complete hysterectomy. After the disease is once established, its diagnosis is one of the easiest case-problems to solve, but in its first stages it may be mistaken for laceration of the cervix with ectropion, ulceration or erosion, and the necrosis of a fibroid polyp with partial expulsion from the external os has repeatedly been mistaken for malignancy of the cervix or body of the uterus. Syphilitic lesions of the vaginal portions of the uterus, although rare, must be remembered. Condylomas filling the vagina resemble cauliflower excrescences and must be differentiated. The chief symptoms of carcinoma are hemorrhage, watery or purulent discharges, and pain, but these often occur irregularly.

The following points may be of value: The tissues are friable and bleed easily. The cervix is difficult of dilatation. The characteristic induration of the cervix increases as the disease progresses. Ulcerated surfaces which are not speedily amenable to treatment should be regarded with suspicion. Any enlargement of the uterus after the menopause is usually due to malignant disease (Fisher). After malignancy the recognition of ectopic gestation ranks next in importance. The life of the patient is in jeopardy and the hazard is too great to permit of dilatory treatment. Incomplete abortion and disease of the appendages of one side are most often confused with ectopic pregnancy. A pyosalpinx or hydrosalpinx closely resembles early tubal pregnancy. Significant of ectopic gestation are enlargement of the uterus, mass at one side of that organ, pulsation of vessels in the lateral fornix, the expulsion of the decidual case from the uterus, together with a history of previous sterility and unusual discomfort during this pregnancy, with cessation of menstruation.

Another interesting point in gynecologic practice is the differentiation of appendicitis from pyosalpinx or ovarian disease. The coëxistence of appendicitis with disease of the adnexa is very frequent and it is ofttimes impossible to say whether the symptoms are primarily due to the appendix or the appendage. Another frequent error is the mistaking of ovarian cysts for ascites. In the cyst the dullness over the tumor with its surrounding area of coronal resonance and the ascites with a tympanitic note in front and above the tumor, and dullness in the flanks, present a typical, clinical picture.

Many mistakes are not due to the ignorance of the physician, but to the fact that sufficient time and thought are not given, nor all available clinical methods and instruments employed in studying the individual case. It is only by a frank confession and careful record of our mistakes that we may prevent our professional brothers from making similar mistakes, and by patient effort and constant observation that we may diminish human suffering and add to the grand sum total of useful medical knowledge. Work is the key that will unlock many mysteries of diagnosis and give the solution of many perplexing and intricate problems.

This paper was well discussed by many of those present.

At the conclusion of the meeting, cultures and slides of a case of anthrax were shown and proved highly interesting. The case was one discovered by Dr. R. P. Maison in the city of Chester, the patient probably being infected at her work in a brush factory. W. E. Egbert, Reporter.

FAYETTE—March, April.

The Fayette County Society met on March 4, at Uniontown, with President Crow in the chair and thirty-five members present.

The request by the Commission on Cancer to devote one meeting a year to the subject of cancer was referred to the Program Committee and steps will be taken to carry this out. A resolution was adopted endorsing the proposed act of the state Committee on Expert Testimony.

A paper on "Ectopic Pregnancy" was read by Dr. McHugh. The diagnosis, treatment, and prognosis were taken up and during the discussion many cases were reported.

At the meeting in Uniontown, April 1, there were thirty-four members present. The secretary reported that out of a membership of 122 there were fifteen who had failed to pay their dues before March 28 and so were automatically suspended until their checks are received. Resolutions were adopted endorsing the setting aside of May 26, as a "Good Roads Day" and local option.

Dr. Lumen then showed a specimen of ruptured tubal pregnancy. At the operation the previous week the left tube and ovary were removed and on opening a large blood clot in the tube the fetus was found.

The paper of the evening was on "Duodenal Ulcer" by Dr. Scott followed by Dr. Gribble, who opened the discussion.

G. H. Robinson, Reporter.

INDIANA—March, April.

Dentists, druggists and veterinarians were invited to attend the Indiana County Society meeting, held March 9, to hear a paper by Dr. W. B. Ansley on "Internal Revenue Regulation No. 35." The paper pointed out the necessity for a strict observance of the new requirements and closed with a review of some of the disputed points. The general discussion which followed disclosed great diversity of opinion concerning the necessity for keeping records of narcotics dispensed in doses exempted. There was also considerable doubt as to what constitutes personal attendance. Letters were read from internal revenue collectors which were flatly contradictory. It was therefore decided best to keep careful records of all narcotics used, no matter where, when or in what doses.

Indiana County Society held a meeting April 13, with President Elkin in the chair. The new By-Laws, recommended by the state society, were adopted. A committee of three was appointed to confer with the county commissioners relative to procuring funds to pay for laboratory work on the outside service at the local hospital. In the discussion the necessity of getting quick reports was emphasized, this not being possible when material is sent to the state laboratory.

Dr. B. F. Coe read a paper on "Appendicitis," in which he pointed out the cardinal symptoms as being pain, nausea, vomiting and a polymorphonuclear leukocytosis. One should never be guided in any way by the temperature or pulse as in some of the worst cases there is a normal temperature and pulse. Too much can not be said of the importance of blood counts. Treatment consists in absolute rest of the entire intestinal tract obtained by withholding everything by mouth. Ice should be applied to the abdomen and gastric lavage employed. If peristalsis be increased, nature's protective process is interfered with and infection is spread. Every case of acute appendicitis should be operated upon within the first forty hours if it has been properly treated. After forty hours it is best to withhold everything by mouth, employ gastric lavage, continuous proctoclysis and Fowler's position. When the process becomes localized, open and drain. Remove the appendix if it can be done without breaking the abscess wall. In children appendicitis is usually much more active. In one case the patient had a perforation within eight hours after the onset.

In the discussion Dr. Kirk stated that heat to the abdomen alternating with cold could be used advantageously. Dr. G. E. Simpson ventured the opinion that cathartics and food killed more patients than surgery ever did. The blood count is the one reliable diagnostic point. It is always a question when to operate in bad cases. Dr. Gates agreed with Drs. Coe and Simpson and thought the proper management was to make the diagnosis and operate. Dr. Stewart of Marion Center thought a careful physical examination would lead to a proper diagnosis. Dr. Moore's views were those of Dr. John B. Murphy. President Elkins said that he had made diagnoses without blood counts, always tried to have the patients operated on and had no trouble with postoperative cases. Dr. Clagett said he never had a case in which operation was performed and did not recall having lost any. His treatment is just the opposite. Calomel is supposed to act on intestinal secretions and should be given followed by a saline. It has always been a question with him if patients are the same after an appendectomy, since they all seem to have a lot of trouble. He expressed great doubt of being able to diagnose appendicitis within the first twenty-four hours without a blood count.

F. W. St. Clair, Reporter.

LUZERNE—March.

At the meeting of the Luzerne County Medical Society, March 3, Dr. Harold J. Gibby read a paper on "Obstetric Surgery." Morphin and scopolamin may come into general use for amnesia, but dystocias will continue to perplex the obstetrician. The remedies for dystocia are many; but podalic version is the only obstetric operative measure to be discussed. There is an element of danger in this as in all major surgery but the advantages are many. Methods, external, bipolar and internal, were described briefly, the internal being given as the usual method and also the easiest. Dangers of air embolism, separation of the placenta, and asphyxiation of child were considered. Contraindications are, during pain, Bandl's contraction ring, tonic contraction of uterus, flat pelves with conjugate diameter less than three inches, and certain other conditions. The indications are placenta prævia, eclampsia, prolapse of the cord, also persistent occipitoposterior and face presentations, and high vertex positions where forceps have failed, the head not having entered the pelvic brim. Special stress was laid on asepsis and the absence of haste. The plea was made for the performance of podalic version in vertex presentations high up, head not engaged, before forceps have tried and failed. Reference was made to the short bag of waters simulating this condition. High forceps are not wholly satisfactory as there is more injury than in podalic version. Podalic version is most successful where the tissues have not undergone trauma from unsuccessful forcep attempts. Case histories showing large proportion of live births, where podalic version was used primarily in borderline cases, were reported.

W. H. Corrigan, Reporter.

PHILADELPHIA—February.

The Philadelphia County Society met February 24, at 8:30 p.m. President Montgomery in the Chair, at which there were presented unusual cases, their diagnosis and treatment.

"Foreign Bodies in the Rectum, with Report of a Case." Dr. Lewis H. Adler, Jr.: Foreign bodies in the rectum may be classified as (1) those formed within the body; (2) those introduced from without. Among the symptoms occasioned by the presence of such bodies are tenesmus, colicky pain, flatulence, distention, and signs of collapse. There is sometimes hemorrhage. When the foreign body is present for any length of time ulceration and abscesses, and even perforation of the intestine may occur. If diagnosis is not possible from the history it may be made from digital exploration of the bowel. Treatment varies with the individual case. Two cases are reported:

Case 1. A man aged sixty, a machinist, was admitted to the Polyclinic Hospital with the history that he had been wearing for a long time an instrument in the anus, which he called a pile-supporter, that it had slipped within the bowel and could not be removed. Attempts at removal made by the resident and my assistant were futile. Upon examination I found a large nodular mass within the rectum firmly wedged in a somewhat lateral position between the spine of the ischium and the promontory of the sacrum. The substance felt like a door-knob. To the shank of it a piece of clothes line had been attached which had broken off in efforts at extraction. Under ether after several ineffectual attempts at removal I disengaged the small head of the instrument, turned it downward toward the anus and extracted the accompanying body which proved to be the handle and valve of a steam radiator pipe. The patient left the hospital on the third day. Upon admission the son had stated that his father was addicted to masturbation and had employed the instrument to further the habit. This was subsequently confirmed by information received from Dr. R. J. Abele to whom patient had first applied and been referred to the hospital. He had at that time a large hook about two feet long of one quarter inch galvanized wire, which he frequently used for extracting the instrument.

Case 2. Mrs. C. B., aged forty-two, about six years previous to consulting Dr. J. J. McLaughlin of this city, and me, thought she was pregnant, having most of the symptoms pertaining thereto. After six months' suppression her menses returned. Two years later she contracted diarrhea which has continued with intermissions of two or three months. Six months previous to seeing me she experienced considerable pain and tenesmus. The pain was low down in the pelvis and about the rectum. As many as a dozen paroxysms a day would occur. About two months before I saw her she passed from the rectum what she termed "a bunch of bones" and a month later a piece of skull. The diagnosis made at this time by Dr. McLaughlin was subsequently confirmed by my examination. The woman was apparently poorly nourished and weighed about seventy-five pounds. Digital exploration of the rectum revealed a mass situated about four inches up the bowel anteriorly which felt very much like the united halves of a clam shell when half open, the edges being sharp and exposed. The tissues in which the mass was imbedded were greatly hypertrophied. A few small pieces of bones were removed at this time by breaking them off, but it was soon evident that the larger mass could not be extracted except under general anesthesia. Therefore on the following day the patient was etherized, the sphincter dilated and the mass of bones removed which I herewith present. It was only by the exercise of the utmost care and the skillful manipulation of the fingers that I was able to remove some of the larger pieces without injury to the patient or myself. The patient made an uneventful recovery, in six months gained twenty-five pounds and has had no further diarrhea. Two possible conditions present themselves as causal: A dermoid cyst, or the product of an extrauterine fetation. Since the essential symptoms of the dermoid cyst were not present and in view of the previous history, I am inclined to the opinion that her condition was due to the latter cause. Since seeing the above patient two cases in the practice of other men have been brought to my attention. In one there was extrauterine pregnancy with adhesion of the tube, and rupture through the rectum with discharge of the fetus. The other was one of extrauterine pregnancy in which the fetal bones, etc., were also discharged through the rectum.

Dr. T. Hewson Bradford: Some time ago a man presented himself for treatment with symptoms of tenesmus and stated that he had a voracious appetite. The day before he had eaten what is termed "pigs in a blanket,"—an oyster between bacon, held together by a toothpick. The man had swallowed the oyster, bacon and the tooth pick. A mass was easily felt in the rectum. It was evident that the toothpick had broken and passed through the alimentary tract. By introducing a speculum into the anal aperture I was able to see it and with the forceps deliver it.

"A Case of Chronic Interstitial Nephritis; Double Hydrothorax, with Apparent Arrest." Dr. James M. Anders: Patient, R. J. G. W., aged forty-four, social history and habits show carelessness as to personal hygiene. Present illness began in August, 1912, with dyspnea on exertion. In October there was distress in breathing which, gradually growing worse, prevented sleep. When first seen by me on May 28, 1913, there were signs of fluid in left pleural sac, but no external edema. From date of first visit to patient the urine contained a trace of albumin, and tube casts, which have gradually increased in amount and number, with failing compensation. Signs of moderate dilatation of the heart later became pronounced, accompanied with a canter rhythm of the heart. Blood pressure was moderately increased but never high. Treatment consisted of rest, both physical and mental, restriction of fluid intake and of the articles of food to milk, cereals, bread and butter, fruit juices, lettuce, and the like. Cardiac stimulants, such as digitalis, strychnin, caffein citrate, spartein sulphate and nitroglycerin aggravated the distress of breathing and the general discomfort of the patient and failed to prevent recurrence of the hydrothorax. For a year the patient's life was despaired of.

On December 2, 1913, the left chest was aspirated for the first time and three pints of serous fluid removed. Six days later an equal amount was withdrawn from the right chest and thereafter the two sides alternated at intervals of about a week until April 4, 1914, I began to tap both sides at one sitting, aspirating fourteen times in all. In July, 1914, left side of the thorax began to retract and the quantity of serum from left pleural sac to diminish. Intervals between tappings became longer but the amount of fluid removed (three pints) remained unchanged for the right side until date of last aspiration, October 29, 1914, when it was about one half. Since this time there has been no recurrence of the transudate on either side of the chest. General tendency to recurrence of the serous fluid was maintained until preparations of digitalis generally employed were replaced by digipuratum, a preparation of digitalis containing the therapeutically active constituents of the leaves in a readily soluble form. The commencing dose was one third grain every third hour which has been reduced to one fourth grain every fourth hour. The urine now contains a strong trace of albumin and a few narrow hyaline casts; the blood pressure is 167 systolic; 135 diastolic. While degenerative changes are obviously continuing in the kidneys, the man's general condition is markedly improved.

The case warrants the following tentative inferences: That cardiac stimulants not only fail to produce an increased flow of urine, as a rule, when considerable fluid is present in the pleural sac, but aggravate the dyspnea until after the transudate has been withdrawn in a mechanical way; that the happy effect of digipuratum in the case reported seems to justify favorable mention of this remedy in similar cases; that tapping of both sides of the chest in double hydrothorax is the proper procedure. This can be carried out under cocain without shock so that mere weakness, unless the patient be *in extremis*, is not a contraindication to thoracentesis.

Dr. James Tyson: Dr. Anders' case bears out the fact that often we wait too long before tapping in cases of this kind, thus delaying the relief so urgently needed. I have noticed that in double hydrothorax, tapping of a single side does not give the expected relief. I have encouraged men to tap early in hydrothorax due to Bright's disease. I have used the digipuratum and regard it as one of the most valuable additions to our armamentarium.

"Carcinoma of the Uterus Occurring in a Woman Twenty-four Years of Age." Dr. P. Brooke Bland: The earliest recorded cases of carcinoma of the uterus, according to Findley and others, occurred in a girl of eight. A case is also reported by Findley in a woman of ninety-three. It is not stated whether the specimen removed from the child was examined microscopically. The patient whose case is the subject of this report is the youngest I have seen in my twelve years' association with Dr. Montgomery. Mrs. M. C., twenty-four years of age, housewife, was referred to Jefferson Hospital by Dr. E. A. Schumann. She was admitted January 21, 1915, and discharged cured, February 13. Her last normal menstrual flow occurred in September. She was married at eighteen and had had two pregnancies terminating prematurely. Her menstruation in October was two weeks overdue; in November, normal; in December she had severe cramps for two days, passed large clots of blood and had been bleeding daily for six weeks before she presented herself at the hospital. Bleeding was aggravated by vaginal examination. There was backache; no bladder or rectal symptoms. Loss of weight and strength had been progressive. Blood count on January 23 was hemoglobin 80 per cent.; white cells 13,600; red cells, 4,890,000; color index 8. Upper part of the vagina was the site of a large round mass with an irregular surface, more or less granular. The surface was soft in consistence but base of mass was firm, hard and cartilaginous. The surface was friable, broke down readily under pressure and bled freely after manipulation. The surface of the tumor extended to the vaginal fornices but the uterus was freely movable and there was no evidence of broad ligament infiltration. Operation was done on January 26. A moderately large mass was discovered at the bifurcation of the left iliac vessels. A radical Wertheim operation was performed and the patient made an uninterrupted recovery.

The laboratory report was submitted by Dr. H. J. Hartz. The specimen is in two parts, the first consisting of os uterus, tube and ovary. The uterus measures 7 cm. in length, 4 cm. in width and 3 cm. in thickness. The cervix is flared and taken up by a new growth of mushroom appearance which measures 5 cm. in diameter and replaces the portio vaginalis. Growth is of friable consistency and reddish color with mottling of black. Center portion is softened and suggests necrosis. Growth extends to the internal os; does not break through the uterine musculature and is encircled by a narrow strip of vaginal wall. Tube and ovary of one side are densely adherent to each other. The tube is dilated and convoluted. The ovary was small and covered by dense adhesions. The second part of the specimen is of gland. One section of gland and one of cervix were fixed in formalin. Sections of the cervical growth are of masses of squamous epithelial cells and a rather scanty fibrous stroma. The sections studied did not show connection between tumor and surface epithelium of the cervix. The mass from the pelvis appears to be of lymph nodes, although the new growth has largely obscured the lymphatic structure. Some of the cell masses are strongly suggestive of sarcoma or at least are atypical of squamous epithelium. Diagnosis of epithelioma seems justified. The diagnosis of squamous-cell epithelioma of cervix with metastasis to pelvic tissue was given in the laboratory report. I would emphasize the fact that carcinoma of the uterus may occur at a very early age and that we should therefore be alert for its prompt detection.

Dr. John A. McGlinn: I should like to congratulate Dr. Bland upon the beautiful specimen he has presented showing the character of the lesion and the adnexa taken out in one mass. Statistics prove that the greatest frequency of cancer of the cervix is between the ages of forty and fifty and that after sixty it is very rare. The earliest case of inoperable cancer of the cervix I have seen was that of a girl of twenty-two years of age who came from the Indian Training School at Carlisle.

"Trachoma and Its Treatment." Dr. L. Webster Fox: Trachoma is a contagious specific disease of the palpebral conjunctiva characterized by increased thickening and vascularity and by formation of granular elevations of lymphoid infiltration which undergo ulceration and subsequent cicatrization. It is particularly common among immigrants, and is spread by careless use of towels, etc. The American Indian is extremely susceptible to it. The disease is usually chronic and commonly bilateral. The changes in the palpebral conjunctiva are slowly progressive, appearing first in the upper lid, and later extending to the lower. The chief clinical picture in the early stages is constituted by small granular bodies scattered over the inner surface of the lid. In later stages this tissue is partly absorbed and partly converted into a dense, tendinous scar-tissue which by its shrinking frequently causes deformities of the lid. The eyeball is greatly irritated by this roughened surface. The cornea becomes involved early, and only prompt treatment can prevent complete blindness. Inflammation is often intense and there is a profuse mucopurulent discharge.

In treatment the tendency of the present day is toward surgical methods and the best procedure is the grattage operation. Complete exposure of the palpebral conjunctiva is effected by means of the Darier forceps. The lid is grasped along the margin by means of this instrument; and, the edge being turned upon itself, the lid is everted until the retrotarsal fold is brought into view. A horn spatula is inserted beneath the lid to protect the cornea; and the exposed conjunctiva is thoroughly scarified by means of the three-bladed scalpel. The granular tissue is then scrubbed with a tooth-brush that has been steeped in corrosive-sublimate solution (1:1000), and the part is then washed with a solution of the same strength. This process of scarifying, scrubbing and washing is repeated again and again with different portions of the lid as it is gradually unrolled until the whole palpebral conjunctiva has been subjected to the treatment. In addition to cold compresses an antiphlogistic lotion is applied and it is surprising how little reaction follows this apparently harsh procedure. Within twenty-four hours the lids can usually be opened without pain or annoyance. Reinfection seldom takes place. The writer is convinced that this disease is a curable one and that some modification should be made in existing immigration laws which require deportation of every case of trachoma. Frequent slitting of the cartilage by means of a Burow's operation, when performed at the same time as the grattage, aids in expanding the eyelids and relieves the pressure caused by the swelling. Extirpation of the tarsus is exceedingly beneficial in cases of chronic trachoma associated with great infiltration and thickening of the tarsus. The incision is made along the ciliary border two lines from it and extending through the cartilage, and is completed by following the curved outline (apex) of same. The tarsus may then be readily peeled off from the underlying tissue. This plan has been adopted by the writer for the last two or three years and no serious complications have ensued.

Dr. G. Oram Ring: I want to congratulate Dr. Fox not only upon his paper, but upon his long and unselfish work in this line. While the method seems to be a very radical procedure, results obtained by Dr. Fox and by all ophthalmologic surgeons who employ it abundantly justify it.

Dr. Brav: I am glad to have heard Dr. Fox state that trachoma is a curable disease. I was discredited six years ago when I ventured to call attention to the fact that in the early stages trachoma is a curable disease. My experience is that the disease is not prevalent in military barracks, asylums and boarding schools and that these places are not sources of infection. Residents of boarding schools are from the better walks of life and trachoma is found principally among the very poor, living in unhygienic conditions and in the agricultural districts. In the large clinics of Budapest trachoma is nonexistent. The same thing is true in this country, where it is found in largest measure among the Indians and the natives of the rural districts of Kentucky.

Dr. Louis H. Debayle, Nicaragua: I have followed the work of Dr. Fox and have been interested to see the good results obtained by him with this method. We have also a great many cases of trachoma and have some good results, but not as many as I have found in the clinic of Dr. Fox. I believe the treatment is one of the best methods. I agree also with him that the disease in its early stages is curable.

Dr. Fox, closing: Our physicians in charge of the various schools are on the lookout for this disease and while they are a little bit too careful in some cases it is better to err on the side of safety in trachoma.

"Papillary Cystoma of the Ovaries with Ascites, the Latter Being a Frequent Cause of Error in Diagnosis." Dr. F. Hurst Maier: In the greater proportion of cases the ascites associated with abdominal tumors causes little or no difficulty in making a correct diagnosis. Conditions that do give rise to trouble are those occurring in women about mid-life who, apparently in excellent health, seek advice on account of the increase in the size of the abdomen. The following illustrative case is given:—

Miss M., aged thirty years; family history negative; menstruation regular. The last period was on November 9, 1912. With exception of diseases of childhood the patient was in good health until September, 1912, when she noticed an enlargement of the abdomen. From that time until her admission into St. Joseph's Hospital in December she had lost ten pounds and suffered from lack of appetite and general weakness. Prior to her entrance to St. Joseph's Hospital she was for three weeks in another hospital where she was tapped and the condition diagnosed tuberculosis of the peritoneum. There were the ordinary signs of ascites, but no edema of the legs or eyelids; no cardiac disease; urine was normal in quantity and quality. There was apparently no hepatic trouble. Ehrlich's diazo test was negative; von Pirquet, positive. Vaginal examination showed the presence of an ill-defined, resisting, immobile mass on each side of the uterus. Operation confirmed the diagnosis of papillary cystoma of the ovary. Besides the free fluid present the left ovary was the seat of a papillary growth the size of a child's head, and the right of a medium-sized grape fruit. The uterus was free; there was little involvement of the intestines, but the surface of the omentum was thickly studded with secondary papillomata. Papillary cystoma differs from the ordinary cyst in its physical characteristics as well as in its clinical behavior. The conditions with which papillary cystoma with ascites is liable to be confused are hepatic cirrhosis, tuberculous peritonitis and malignant disease of the abdominal viscera. According to Schmidt there is no other sign which might so surely determine the difference between malignant, tuberculous and hepatic ascites as carcinomatous infiltration of the umbilicus. Vaginal and rectal examination should be a routine practice in all cases of abdominal enlargements of doubtful origin. This necessity is emphasized by the fact that papillary cystoma stands on the border line between innocence and malignancy.

"Two Cases of Multiple Serositis." Dr. Elizabeth L. Peck: Chronic diffuse peritonitis, general chronic perihepatitis, pericarditic pseudocirrhosis of the liver are some of the synonyms known also in a portion of the cases as multiple serositis. The cause of the malady is unknown and may not be the same in all cases. Rolleson divides the cases into three groups: (1) Cases associated with inflammation of the pericardium and pleura; (2) those associated with arteriosclerosis and granular kidney; (3) cases due to various causes. The cases I report to-night belong to the first group. The disease is frequently ushered in by a pleurisy or pericarditis; sometimes the early symptoms are vague. The disease is differentiated from ascites due to cirrhosis of the liver by its negative history, absence of hemorrhage, its longer duration and the fact that it attacks two or more serous membranes.

Case 1. A. B., aged thirty-seven; poor family history; patient was never vigorous. In August, 1910, she had pains in her chest and was not well in the autumn. In December she had an effusion in her knee joint but could recall no injury. This recovered and there has been no recurrence. In December she had pleurisy with effusion, marked on left side, but involving also right base. From this she made a fair convalescence. Her last menstruation was in February, 1911. For the next three months when the period was due violent attacks of pain and vomiting occurred. I attributed this condition to the suppression and treated accordingly. I am inclined to think, however, that there may have been some associated perihepatitis or possibly pericarditis. In July there was recurrence of the pain and vomiting and the liver began to enlarge and there was some ascites. In December the effusion was marked with cyanosis, shortness of breath and failure in strength; infiltration of the right lung. Exploratory incision was followed by shock. Six pints of fluid with a specific gravity of 1.021 and a considerable albumin content were removed. The liver reached nearly to the umbilicus and to touch gave a sensation of soft roughness. There was no evidence of tuberculous invasion. The pelvic organs were markedly atrophic. A slow and partial recovery ensued.

In March, 1914, an acute pulmonary congestion occurred from which the patient rallied slowly. In July, seven pints of serum were removed. Another tapping was required in October and about every four weeks since that time, the amount varying from ten to fifteen pints with a considerable amount being left. Patient is fairly comfortable. Both pleura contain fluid to about the angle of the scapula and pleuritic frictions are heard above the spine of the scapula on the left side. The heart is atrophied; heart tones good; appetite and digestion excellent, except when pressure becomes extreme. The required time for paracentesis is no greater than where a large portion of fluid is removed.

Case 2. Mrs. F., aged fifty-three years, always healthy, excellent family history; in February, 1913, had a febrile attack with much backache, and was not strong after this condition. In August the pains became severe and she lost weight. In June, 1914, diarrhea began and her weight fell from 118 to 76. Under treatment directed to lessening peristalsis and relief of pain improvement occurred. In December an eruption resembling erythema nodosum appeared upon the legs and both feet and legs were much swollen. Ascites appeared and increased rapidly and an effusion occurred in both pleura, reaching to the level of the spine of the scapula. In January, 1915, seven pints of fluid were removed by paracentesis. Following this the pleural effusion decreased rapidly. Swelling of the legs has entirely disappeared but pain in back persists at about the level of the waist. The area of dullness is more marked on right side, although the fluid level changed with position, denoting probably some deforming peritonitis of the mesenteric attachment which allows abdominal contents to float more readly in one quadrant than in another. The gastrointestinal condition is poor and patient has lost strength rapidly. The blood is nearly normal, except that coagulation time is 8½ minutes. The urine analysis is negative except for its high indican content. Prognosis in these cases is almost hopeless for entire recovery and the treatment supporting and symptomatic with paracentesis as conditions demand.

Dr. James M. Anders: I have long felt that most of the cases of multiple serositis could be referred to tuberculosis, I still think the majority of cases can be so referred upon close and careful study. I have also seen a certain number of instances following a characteristic form of Pick's disease. Whether or not there is a multiple serositis which can not be referred to either one of these conditions I think is somewhat doubtful.

Dr. Joseph Sailer: Multiple serositis in my experience is comparatively rare. I think it only fair to conclude from the number of reported cases in which evidence of tuberculosis has been sought and not found that there must be cases of Pick's disease in which tuberculosis is not the etiological factor. A remarkable feature is the rapidity with which the serous membranes refill. In regard to treatment I think we may assume a purely passive position. So far as I know there is no treatment of any kind. We can only prolong the life of the patient by relieving pressure from time to time.

Dr. Peck, closing: I should simply like to say that I look upon these cases as probably of low-grade tubercular origin.

"A Case of Disturbance of the Autonomic Nervous System." Dr. Joseph Sailer: Eppinger and Hess recognize two main divisions of the general nervous mechanism of the body, the animal and the vegetative. The animal portion comprises all that part of the central nervous system which possesses consciousness or is under the control of the will. The vegetative nervous system includes the cervical, thoracic, lumbar and sacral ganglia and the nerve fibers which proceed from them. These two systems show certain definite pharmacological reactions upon which Eppinger and Hess lay great stress. The sympathetic system is stimulated by adrenalin; the autonomic, by pilocarpin, and depressed by atropin. Eppinger and Hess had the idea that these two systems are physiologically antagonistic, but it does not seem that this is absolutely correct. Later consideration would indicate that there may exist at the same time evidence of autonomic and sympathetic stimulation, as in high blood pressure associated with hyperchlorhydria, or possibly depression of both systems, as in the case of some of the autonomic manifestations of Addison's disease. We are, therefore obliged to discard the idea of a see-saw action of the two systems. Nicotin, according to Langley, an observation which has been amply confirmed, primarily stimulates and then depresses both systems to the point of paralysis. The following case bears somewhat upon the value of these observations in clinical medicine:—

The patient, a woman of thirty-two years, was seen in consultation with Dr. Beach. Six years before she had had rather persistent vomiting after meals. Shortly after this she had an attack in which she was black, cold, could not speak, but remained conscious. For twelve weeks following she had some form of heart trouble; she was extremely weak, had vigorous palpitation if she attempted to get up; there were attacks of numbness in the limbs; she complained of a lump in her throat, a sense of falling; was constipated, and the bowel movement was associated with violent palpitation of the heart. There was a sense of throbbing in the abdomen. During menstruation, which was regular, all her symptoms were worse. After her marriage it was found that she had an extreme type of vaginismus. She had lost fifty-six pounds in weight in six years.

From the history it would seem that there was some disturbance of the vegetative nervous system rather than with a distinctly organic disease. The symptoms suggested a depression of the autonomic nervous system. Having had a skillful and prolonged medical treatment, Dr. Beach and I decided to place her exclusively upon pilocarpin in the hope that this drug might stimulate the defective system and produce some improvement. There was such an improvement at once, at first subjective. Later the palpitation diminished. There was gain in weight and strength and the appetite improved. Constipation was better and the vaginismus disappeared. Six months later when Dr. Beach brought her to my office for a second examination she had gained fifteen pounds. Pulse under the examination was 156, but rhythmical; ordinarily it was below 90. The patient was stronger, able to work about the house, was cheerful and encouraged. Blood pressure: 140 systolic; 90 diastolic; hemoglobin 80 per cent.; red blood cells 4,390,000; white, 12,000. Night and morning specimens of urine were normal. There was special improvement in the gastrointestinal tract. The case might possibly be called one of vago atonia and this is probably the predominate lesion, but the symptoms are by no means clear cut.

Although when one reads Eppinger and Hess' article it seems as if nearly any symptom known to clinical medicine may be produced by disturbance of the vegetative nervous system and that anything like a clear-cut, well-defined picture of a single disturbance of this character is at present impossible. Nevertheless, a therapeutic test does apparently indicate that the pharmacological stimulating hormone of autonomic system was efficient in producing amelioration in some of the symptoms. The patient was not told of the diagnosis and there was merely a suggestion of a slight change in treatment. In view of her many changes in treatment we can not conclude that suggestion played any particular part in her recovery.

"An Unusual Case of Interstitial Keratitis." Dr. Edward A. Shumway: The case is reported because of its unusual severity and because it illustrates the importance of early diagnosis and a determination of the true cause of an inflammation. The patient, a boy of five years was seen in the service of Dr. G. E. deSchweinitz on April 16, 1914, at the University Hospital. The mother had died of pneumonia two years after his birth. She had had good health but was of irregular habits. The boy was a bottle-fed child and when less than two weeks old blisters formed on his hands, feet and body. When less than one month old it is said that on one day a few drops of blood oozed from his eyes but there was no inflammation. He has not been ill except with pneumonia before he was a year old, and from this he entirely recovered.

On March 10, 1914, lumps, about the size of hens' eggs, dull red in color, were noticed upon the body, chiefly upon the legs, lasting about four days. On March 24, the right eye became inflamed and bloodshot. On March 17, the left eye became affected, when a diagnosis of interstitial keratitis was made. Ten days later the child was referred to Dr. deSchweinitz. The right cornea was densely infiltrated and at its center was a yellowish plug of tissue, the surface of which was necrotic and stained deeply with fluorescin. Entirely surrounding the infiltrated area, but within the corneoscleral limbus was a solid red band, 2 mm. in width, composed of closely packed blood vessels. The left eye showed also a central corneal infiltrate. Four days later there was complete infiltration of the left eye, completion of the vascular rim, and an area embracing the lower third of the cornea which stained with fluorescin, from loss of the surface by ulceration. The central portion of the cornea showed a dense white plug of necrotic tissue about 3.5 mm. in diameter. The right eye showed further necrosis of the central part of the cornea, the pericorneal vascular band was about 4 mm. in width, and there was exfoliation of its lower portions down to Descemet's membrane. At this time the right eye was thoroughly cauterized with carbolic acid. A von Pirquet test gave a faint reaction, but the Wassermann test showed a very strongly positive reaction. Inunctions of mercury had been ordered and locally atropin and holocain in one per cent. solutions had been employed. On April 25, an intravenous injection of 0.5 gm. of neosalvarsan was administered by Dr. Siter and on May 2 0.7 gm. was given in the same manner. The further course of the disease was characterized by a gradual decline in the severity of the symptoms. In the right eye the cornea eventually perforated, but on leaving the hospital the eyes had nearly lost their injection, the red bands were absorbing and in the left eye the child was beginning to recover some sight. At the present time in the right eye vision is perception of hand movements directly in front of the face. The left eye has cleared remarkably and fingers are counted at one meter from the eye.

Despite the bad tubercular history and the absence of other signs of congenital syphilis, the latter was shown to be the true causal factor and prompt use of the proper constitutional treatment was the means of saving the child from probable total blindness. The case adds one more to the list in which salvarsan or neosalvarsan seems to have been of great service in the treatment of interstitial keratitis.

"Unusual and Interesting Cases of Syphilis." Dr. Jay F. Schamberg: I have selected from my case book cases of rather unusual interest. One is that of a man, aged sixty-two, who in 1911 applied for treatment of a growth upon the penis which had existed for several months. There was history of persistent fever for several weeks with a temperature at night of 101. The man had lost twenty-five pounds in weight. Upon the trunk there was an eruption quite different from that of roseola syphilitica. Despite negative Wassermann tests he was placed upon antisyphilitic treatment. Within forty-eight hours the fever had ceased and within three weeks he had regained his loss in weight. The case is of interest because of the completely absent Wassermann reaction in the face of secondary symptoms.

The second case was that of a man, aged forty-two, whom I saw two months ago, who had upon the mucous border of the lower lip a nodular pinkish elevation. There was no induration. An enlarged submaxillary gland aroused our suspicions. Wassermann reaction was strongly positive. After three weeks of vigorous antisyphilitic treatment the Wassermann reaction was again strongly positive. Despite the continued positive reaction I believe the early recognition and treatment of this case have lessened the chance of involvement of the central nervous system.

The third case is that of a man of fifty-six whose syphilitic infection dated back twenty-five years. He had osteitis of the tibia with rheumatoid pains. He had also the Argyll-Robertson pupil. This man has had twenty-three intravenous infusions of arsenobenzol and a course of mercurial injections. The Argyll-Robertson pupil has practically disappeared and the man's general health is excellent. There is a low-grade interstitial nephritis but the number of casts in the urine is less than before treatment. I believe the strongly positive Wassermann reaction, which we can not influence, indicates the presence of the spirochetes in his cerebral cortex which we can not reach. The man regards himself as well but understands that he must be under medical treatment. The intravenous infusions which he received were not only without damage to the kidneys but with benefit and with the arrest and disappearance of symptoms of paresis and other manifestations of syphilis.

"Hernia *versus* Bubo." Dr. B. Franklin Stahl: The following case illustrates the difficulty in the differential diagnosis of hernia and bubo.

Mrs. X., aged forty-two years, sent for me December 30, 1914, for severe abdominal pains. These were at my first visit attributed to gallstones. On the following day she was suffering great pain and asked me to examine a mass in her right groin which had come that morning while at stool. She had had for fifteen years a hernia on the left side. Attempts at reduction were practically without result. I told the husband that the condition might be a hernia or a bubo. In the evening the mass was the same size as when first seen. I called Dr. Müller in consultation and the conclusion was reached that the case was one of hernia, partially reducible and that part of the remaining swelling was due to edema incident to the efforts at reduction. A pad and spica bandage were applied to the groin. The next morning the tenderness had persisted, the mass was the original size; bowels had been moved; there was no heat, nausea, impulse, bogginess or anything definitely suggestive of the condition. Operation was consented to. Dr. Müller's opinion at this second visit was that the condition was due to adenitis. Incision over the right femoral hernia revealed a sac with a mass one fourth of an inch thick, edematous, containing serous fluid and a piece of intensely injected omentum. It was followed up to the neck and excised.

A typical Cushing operation was then performed. Incision over the left inguinal region disclosed no sac and the internal oblique was sewed to Poupart's ligament over the round ligament. No sac was found in the femoral opening. Both wounds were closed without drainage. The laboratory report made by Dr. A. G. Ellis was inflammatory hernial sac with adherent omentum showing hemorrhage due to pressure or constriction.

The points of special interest are that the patient, an intelligent woman, insisted that there was no mass in the groin prior to the time she showed it to me; the presence of a mass with signs and symptoms so vague that positive diagnosis was impossible; and strongly suggesting malignancy; hernia of the left side of fifteen years' duration, yet which gave no evidence when the hernial rings were exposed; operation and laboratory findings indicating a longer duration of the trouble than the history admits. Elmer H. Funk, Reporter.

YORK—April.

The York County Society met in regular session in the parlor of the Colonial Hotel, April 1, Dr. Shatto called the meeting to order at 1 p.m.; and sixty physicians were present. Drs. B. F. Parker, Charles M. Stephens, S. J. Immerman, George Purcell, Charles Fackler of York, and Eleanor Taylor Calverley of Kuweit, Arabia, were present as guests.

Dr. J. Whitridge Williams, professor of obstetrics in the Johns Hopkins Medical School, Baltimore, delivered an address upon the "Use and Abuse of the Obstetrical Forceps." He stated that he employed the forceps considerably less to-day than he did twenty years ago. His investigations proved that the methods of teaching obstetrics throughout the country are not in keeping with the attention devoted to other subjects, and that only two medical schools were sufficiently prepared properly to take care of the subject from a teaching standpoint. The poor results obtained are due to (1) the lack of knowledge of pelvimetry; (2) imperfect diagnosis of the position and presentation of the child; (3) the non-recognition of the stage of labor; and (4) haste on the part of the doctor and patient. He urged that careful measurements should be made in all cases long before labor has begun. In the Johns Hopkins Medical School, in his department, eight per cent. of all white women had some contraction of the pelvis, and thirty-five per cent. of all colored women, and six per cent. of both black and white women had contraction of the pelvic outlet. Better diagnosis of the position of the child can be made by external examination, which can be made often and without fear of infection. Many physicians are totally ignorant of the mechanism of labor.

Dr. Williams stated that the low-forceps should be employed when the head lies between the vulvar outlet and the ischial spine; the mid-forceps, when the most dependent part of the head is on a level with the ischial spine; the high-forceps, when the greater diameter has not passed the superior strait; and forceps to the floating head, when the head is not engaged. Under no circumstances should the forceps be applied when (1) the pelvis is too small; (2) the head too large; (3) the cervix is not fully dilated, and (4) the membranes are not ruptured. The indications for the application of the forceps are, in the child, (1) sudden change in the rate of the heart, and (2) the passage of meconium in a head presentation; in the mother, (1) exhaustion by objective manifestation, (3) elevation of temperature. Dr. Williams added that when the head has passed the ischial spine, if advance does not occur in two hours, forceps are indicated, and that if the head is on the pelvic floor, and makes no advance in one hour, the same is true.

In decided degrees of pelvic contraction, if diagnosed early, Cesarean section should be done, and the mortality is not over two per cent. If seen later, pubiotomy is the proper procedure, and the mortality should not exceed two per cent. The importance of ante-partum measurements is therefore apparent.

About three fifths of the cases of low forceps can be obviated by the employment of one cubic centimeter of pituitrin, which latter is also capable of doing considerable harm. It should never be employed unless the cervix is fully dilated and the head is at or below the ischial spine.

Dr. Williams urged the more prevalent use of rubber gloves and the substitution of rectal and perineal examinations instead of vaginal examinations, during labor. The former makes infection impossible and saves time by making unnecessary the frequent washing of the doctor's hands.

Although the low-forceps and the mid-forceps are ofttimes necessary, there is rarely occasion for the high-forceps, and he has had no occasion to employ the forceps to the floating head for over ten years. The average doctor does more harm with the obstetrical forceps than without, and it would be a wise plan, Dr. Williams stated, if all mothers would insist that only the low forceps, such as our grandfathers used to carry around in their coat-tail pockets, be employed by the doctor.

Relative to the much advertised "twilight sleep," Dr. Williams stated that his experiences about seven years ago were very unsatisfactory, and that during the past six or seven months his personal observations have not been such as to permit him to endorse it. His description of the behavior of the successful (?) cases brought forth much laughter, and it was soon apparent that he was in no sense an advocate of this procedure.

The only lodge doctor in the society officially notified the society that he had resigned his position as lodge physician, and wrote to the lodge that he resigned "out of respect for the wishes of my fellow members of the York County Medical Society." The society, with 103 members in good standing, can now boast of being absolutely free of "lodge doctors." Julius H. Comroe, Reporter.

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Semicentennial—Allegheny County Medical Society.

FOREWORD.

The Allegheny County Medical Society celebrated its Semicentennial Anniversary on Tuesday, April 20, 1915.

In the morning there were clinics and demonstrations at the various hospitals and laboratories in Pittsburgh.

An informal luncheon was given at the University Club at noon for the physicians who were the society's guests for the day.

In the afternoon at the Hotel Schenley there was a scientific meeting which was both interesting and profitable, and was largely attended. Dr. E. B. Haworth, president of the Allegheny County Medical Society delivered an address, followed by a congratulatory address by Dr. E. B. Heckel, president of the Medical Society of the State of Pennsylvania. A symposium on "Intestinal Stasis" consisted of four papers by visiting physicians, guests of the society, and brief discussions by several members of the society.

In the evening a large and enthusiastic dinner took place at the Hotel Schenley. There were three hundred and seventy present including a number of the prominent laymen of Pittsburgh. Dr. George C. Johnston acted as toast master; an historical address was read by Dr. E. B. Heckel, and brief and informal speeches were made by a number of the guests. The evening was interspersed and ended with music and vaudeville performances.

ADDRESS BY THE PRESIDENT OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

ELWOOD B. HAWORTH, M.D.,
Pittsburgh.

It is with pride and a considerable degree of satisfaction we assemble here to-day to celebrate the fiftieth anniversary of our existence as a society. Its founders certainly builded well. From small beginnings the membership has gradually increased until now it numbers nearly 1200. We congratulate you upon attaining the half-century period of your existence as a society; to our guests, more especially to you who have traveled far to take a special part in this afternoon's proceedings, we extend our gratitude, and to the officers of the state medical society and sister societies from the surrounding counties, we extend a hearty welcome.

We shall not touch upon this society's past, for one, than whom none is better qualified, has been appointed to dwell upon its history. We may say however that with pardonable pride the members of the profession here realize the progress attained through the educational advantages afforded by the medical institutions of this city. A medical school and several large hospitals have been established which, for modern appointments, up-to-date equipment and character of work accomplished, compare favorably with any similar institution of the country. When we think of twenty hospitals, either entirely new or very recently modeled to meet modern requirements, with a capacity of nearly 4000 beds, offering postgraduate clinical instruction to interns, a wealth of clinical experience to the members of the medical staffs and their assistants, and training and graduating hundreds of nurses; when we think of our newly reorganized medical school with its most modern equipment and its most excellent teaching force; and when we compare all of this with the state of medical activity of fifty years ago, then we feel indeed that Pittsburgh should lift her head and assume the position that rightfully belongs to her by reason of the institutions she maintains, by reason of the number of her able teachers and practitioners of medicine, and by reason of her population which together with that of the surrounding territory numbers nearly a million people.

Let us not forget that unity of purpose is essential and a most powerful influence for the accomplishment of those things which are set forth as the objects of this organization, and, as a considerable duty devolves upon this society as the representative medical society of the county, it behooves us, its members, having its best interests at heart, to promote those things and perform those works which we are thoroughly convinced will build a structure such as, when the history at the centennial celebration comes to be written, will cause it to be said we also have builded better than we knew!

It is for you, gentlemen, to decide whether by unity of purpose and personal sacrifice and determination you will give this society an enviable record and this city a leading reputation as a medical center, or by disputations and dissimulations disintegrate the structure. We can not speak more plainly at this time.

In conclusion, we wish to say that the thanks of the society are due to the committee on arrangements for the very excellent program arranged for this afternoon, and we can assure you, gentlemen, that whatever success attains this celebration may be largely ascribed to the committee's untiring efforts to make it an occasion long to be remembered.

CONGRATULATORY ADDRESS.

BY EDWARD B. HECKEL, M.D.,
President of the Medical Society of the State of Pennsylvania, Pittsburgh.

Mr. President, members of the Allegheny County Medical Society and honored Guests: It gives me great pleasure on behalf of our state society to extend kindly greetings and to congratulate you upon this felicitous occasion, an occasion which at once becomes an epoch in the history of your society, for the honorable completion of fifty years of existence is of more than fleeting interest. To review the history of your society would be to review the history of medicine, a colossal task, for during your existence more advancement has been made in medicine than in all previous time, and although your society may not have contributed many epoch-making additions to the science of medicine, it nevertheless has contributed much to the sum total of human knowledge. Your society has always occupied a position in the front rank for everything that stands for scientific medicine, for everything that stands for advancement, for everything that is scientific and ethical; it has ever been actuated by high ideals; it has ever been unselfish in the advancement of the public good; many, and perhaps all the safeguards which this community now enjoys for the protection of its health and longevity have originated and have been fostered and brought to a successful fruition by the untiring efforts of the leading spirits of your society.

Your society has always occupied a prominent place in our state society and equally so in that greatest of all medical societies, the American Medical Association. Your members have contributed much to the scientific work of these societies. Your society has always fostered organization, fully realizing that "in union there is strength" but never for any selfish purposes.

Organization is a striking characteristic of us as a nation. It has often been said that if a lot of Americans were shipwrecked on an island the first thing they would do, would be to call a meeting, elect a chairman and organize. This no doubt is a virtue and characteristic of the sense of justice which is so strongly evident in us as a people, yet I can not but feel that it may be much abused. We often lean too heavily upon the organization, forgetting that we the individuals make up the organization, and that, if the organization is to amount to anything, or if it is to stand for anything, we the individuals must shoulder the responsibility. Individual responsibility in other words is the keynote of organization, and especially in medicine.

If we are to accomplish that which we idealize we must be ready to bear the burden and so conduct ourselves that our personalities shall influence public opinion. Collectively there is no set of men any where that spends so much time for the advancement of all that which eventually tends to annihilate their own business as do physicians, yet our weight and influence in the body politic is of little moment. If you will search the records of this state or any state you will fail to find any legislative act fostered by the medical profession which has a selfish interest. Every single act ever originated or fostered by organized medicine has been for the public good, yet think of the time and labor it has taken to convince our people to bring about that which has been accomplished. Yet we should feel proud of the fact that, notwithstanding, our state to-day stands as a recognized leader of medical educational standards. Yet we must ever be on the lookout for new legislation tending to lower the standards already set, we must be careful lest laws are enacted which will result in an involution rather than an evolution. No doubt all the proposed adverse acts are the result of well-meaning and sincere but misguided individuals. It is the business of us, as conservators of the public health and welfare, to exert our influence in behalf of all that which stands for true advancement and to obstruct all that which will retard, hinder and prevent it.

Our state society now comprises nearly seven thousand members. Think of the influence which seven thousand educated trained men could exert in this great commonwealth if rightly applied; think of the influence which seven thousand such men could exert on public opinion in favor of animal experimentation if each of them would tell the father and mother in every case of diphtheria that the life of their child had been saved as the result of animal experimentation; think of the influence seven thousand such trained men could exert if they impressed the people they come in contact with that practically all that we know is the result of animal experimentation; think of the influence seven thousand trained men could exert on public opinion if they impressed the people with the fact that animal experimentation is simply carrying out a well-known aphorism "never to guess when it is possible to know," that it is more humane to "try it on the dog" than on one of their dear ones. Think of the influence seven thousand trained men could exert if they told the people that animals themselves benefit as much as man as a result of animal experimentation; think of the influence seven thousand men could exert for anything pertaining to the good of this great commonwealth; think of it and you can not help being impressed with your own individual responsibility; think of it and you can not help so conducting yourselves that you will convince the people of your sincerity and honesty; think of it and you will exert an influence for good which can not be estimated.

BASIC CONSIDERATIONS IN THE ROENTGEN STUDY OF INTESTINAL STASIS.

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The speaker feels it an especial privilege to have had assigned to him the opening of this symposium on intestinal stasis, for he has keenly appreciated for some time that there is a great lack of uniformity both in the method of examining patients roentgenologically and in the interpretation of results. A particular effort has been made through careful analysis of a large series of cases to uncover the fundamental considerations which should govern the interpretation of roentgen findings and the correlation of these findings with the results of other methods of clinical study. A thorough familiarity with the classical work of Pawlow, Cannon, Bayliss and Starling, and others is essential to a proper interpretation of the roentgen findings in gastric and intestinal pathology. In fact, Pawlow's book on the "Digestive Glands" and Cannon's book on "The Mechanical Factors of Digestion" might well be designated as the roentgenologist's *vade mecum*.

The factors of intestinal stasis are, in effect, mechanical. In whatever way the intestinal stasis may be considered primarily the result of a lesion of glands of internal secretion, irritated vagus, sympathetic disturbances, etc., the effect is a mechanical one. Since the effects are essentially mechanical and because roentgen studies deal only with mechanical considerations, it is highly important that no effort be spared to arrive at a thorough understanding of the physiology of the normal intestine.

That the terms alimentary toxemia and intestinal stasis are not synonymous is self-evident. Some patients may show evident intestinal stasis without exhibiting any signs of toxemia. Other patients with only slight stasis may be intensely toxic, while in still other patients with a high grade of stasis, there may be only slight toxicity. There is also a relation between the composition of the bowel content and the potential toxicity resulting from a certain degree of intestinal stasis; certain dietaries favor more than others a pernicious intestinal flora. In other words, the ratio between intestinal stasis and the individual's defensive powers determines whether or not he will show symptoms of toxemia; hence, the above statement that the terms "intestinal stasis" and "alimentary toxemia" are not synonymous. If we agree with the spirit of modern medicine which holds that prevention is greater than cure, must we not recognize that every patient with intestinal stasis has a potential alimentary toxemia? And because a patient with alimentary stasis is at present apparently symptomless, are we satisfied that the stasis may be disregarded?

Since the roentgenologic investigation deals only with the mechanical aspects of intestinal stasis, it is important to emphasize the necessity of balancing the roentgen evidence by a consideration of the other clinical features of the case, especially those relating to the patient's ability to destroy and eliminate toxins. It is probable that, generally speaking, the *x*-ray evidence should not be considered in itself sufficient to warrant serious surgical intervention. Yet, in the light of our present understanding of intestinal stasis, it is certainly not justifiable to undertake a serious surgical procedure for the relief of alimentary toxemia until after a thorough-going *x*-ray examination has been carried out.

Before an audience of clinicians, it will hardly be desirable to devote much time to technic. Yet so much of the reliability of results depends on the method of examination followed, it seems especially important that sufficient emphasis be laid upon this feature of the discussion.

In some branches of medicine, familiarity with the technic employed is not so essential in the interpretation of results. In orthopedic work, for instance, in which *x*-ray examinations figure so prominently, the results can nearly always be interpreted by the orthopedist as well, or even better, than by the roentgenologist, no matter how experienced. The technic of the ordinary roentgenographic examination of bone and joint conditions is established and the results are concrete in the roentgenogram.

In the diagnostics of internal medicine, however, the technic of the examinations is far from being standardized. The great majority of the examinations are inadequate. Equipment, technical knowledge, and sufficient time for the examination are prerequisites. It must be recognized that there are as yet relatively few men who are qualified to utilize to the best advantage the roentgen method in the study of the alimentary tract. Reliable deductions can not be drawn from a study carried out by plates alone. The thoroughgoing fluoroscopic technic which is required, demands a clinical familiarity with the conditions likely to be encountered. Occasionally plate records are desirable. Gallstones, renal concretions and particularly ureteral calculi are often thus discovered when they would be missed if the examination were only fluoroscopic. Therefore a combined technic, largely fluoroscopic, with a few plate records for the elucidation of doubtful points, is essential.

In all the writer's work, an effort is made to follow a routine technic, modifying or extending the routine in certain cases as the circumstances seem to demand. The writer insists upon the importance of a complete alimentary tract examination in every case, even though the symptoms may seem localized to some one portion of the digestive tract. So often one finds important bowel lesions in cases clinically diagnosed as gastric disorders. Right upper quadrant symptoms, without any discoverable organic lesion, are extremely common in cases of alimentary toxemia. Except in urgency cases, such as acute obstruction, perforating ulcer, acute appendicitis, etc., it therefore seems essential that the roentgenologist be allowed the time necessary for an adequate routine study. This means that at least four full days and often five must be allotted for the roentgenologist's study. Less time is inadequate, and the results will be proportionately less accurate. A study of the function of the bowel must be carried out upon the functioning bowel. The patient's life should be ordered as nearly as possible as he or she ordinarily lives.

In the writer's practice, every patient receives at breakfast time, in place of his usual meal, an *x*-ray test ration consisting of food partly warm and partly cold, with which is intermixed two ounces of some opaque salt.[1] By thus substituting the barium meal for a regular meal, the rhythm of meals is not interrupted and whatever influence the regularity of meals may have upon intestinal function is not interfered with.

A liquid meal is essential for an examination of the stomach. If, however, a study of the stomach is not of interest, two ounces of barium sulphate may be taken in connection with an ordinary breakfast of the patient's choosing. Observations are made immediately after breakfast and at the second, fifth, tenth, twenty-sixth, thirty-fourth and fiftieth hours. In certain cases, the observations may be continued beyond this time. At the fiftieth hour, in most patients, the bowel is emptied or has been watched a sufficient length of time so that it can be cleared by enemas.

The following morning the colon is injected with an opaque enema. It is very important to follow out exactly the directions concerning the patient's preparation for this examination. The writer directs that the preparation, consisting of three enemas, be given between 7 and 7:30 A.M. Three warm enemas, one to two and a half pints each, should be given, each enema to be retained a few minutes before evacuation, and each to be evacuated before the next one is injected. The injection should never be so large as to cause the patient nausea nor any unreasonable amount of distress from distention. The patient may then go to breakfast, reporting at the *x*-ray room at some appointed hour between 9:30 and 11, preferably as soon after 9:30 as possible. This plan of preparation secures most thorough emptying of the bowels. Long experience has shown that in the great majority of cases, the meal of the night before has, by 7 the next morning, passed entirely into the colon, whence it may be dislodged by enemas administered in the manner above specified. The writer insists upon an interval of at least two hours between the cleansing enemas and the opaque enema in order to favor absorption or expulsion of whatever residue of water the bowel may retain, and which would interfere seriously with the shadow of the opaque enema were it administered immediately after the cleansing preparation. The opaque enema must be given before 11, since, by this time, portions of the breakfast eaten at 8 o'clock are already beginning to arrive in the terminal ileum.

The writer has given the opaque enema to several thousand patients in accordance with all the precautions just suggested, and he feels that the results thus obtained, especially with reference to the ileocecal valve, are comparable and reliable. During the colon injection, one should make careful note of the amount of distention to which the pelvic colon must be subjected before the head of the barium column passes on into the iliac colon. Other points of hindrance must be noted, as well as their response to manipulation, change of position, the administration of anti-spasmodics, etc. Following the evacuation of the barium enema, the patient should once more be studied to note what success has attended the effort of evacuation. Valuable information is sometimes secured in this manner.

Once more let it be emphasized that the observations are made fluoroscopically. It is not only much more economical, but it is infinitely more reliable. Some amateurs in gastrointestinal roentgenology work in the manner suggested by the following quotation from a recent number of a national medical journal: "The patient was brought in for a roentgen examination. The mixture of three ounces of barium sulphate and twelve ounces of buttermilk was given him and after a few minutes, a large picture of the abdomen was taken to locate the stomach." How laborious a method of finding that elusive organ! Yet this little passage really exemplifies the scope of the *x*-ray work, upon which, in many instances, judgment is passed concerning the value of roentgenological work in general.

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[1] The writer prefers a specially tested barium sulphate.

The writer holds that a roentgen study of the alimentary tract can not be carried out by plates or "pictures"; the conclusions which may be drawn from "pictures" alone regarding position, form and apparent narrowings in the colon are extremely unreliable and one may say almost negligible in importance. With increased experience, one pays less and less attention to morphology, infinitely more stress being laid upon function. The old saying, "Handsome is as handsome does," truly applies in this connection. Particularly in roentgenology of the intestinal tract are "pictures" insufficient and misleading. In fact, these days one hesitates to print illustrations in a roentgenological paper for fear of helping to perpetuate the erroneous notion that the roentgen diagnostics of internal medicine is done by "pictures." The roentgenograms serve simply as maps from which one may talk, and on which one may make discussions. With the exception of gross malignant lesions, it may be declared dogmatically that there is no *x*-ray finding of value concerning the intestinal tract which can not be ascertained much more easily and more definitely from fluoroscopic examination than from the expenditure of any number of square yards of glass plates.

One who has never practiced it can not appreciate how intelligent is palpation conducted under fluorescent screen guidance, the intestines having been previously visualized by the introduction of the barium meal. The identity and relation of the various coils of bowel; the mobility (and therefore the question of adhesions) of the cecum, ascending colon, the various flexures, and particularly the pelvic colon; the relation of various intestinal segments to palpable masses or to points of localized tenderness on pressure; the mobility of the terminal ileum and its relation to the appendix shadow and to the cecum; the fixity and permanency of points of apparent spasm or kinking; the constancy of an apparent filling defect and its coincidence with a mass or a point of localized tenderness—these are only a few of the many questions relating to the bowel which can be determined by visualized palpation. How many of them, if indeed any, can be learned by any manner of plate study? That an adequate roentgen examination of the alimentary tract following an opaque meal can not be conducted by means of roentgenograms alone, has already been urged, although for the purpose of illustrations, as for such occasions as this one, occasional plate records may prove useful.

It seems to the writer important to emphasize the horizontal position for fluoroscopy. Most of the fluoroscopy now being done is practiced with an upright instrument. The great importance of horizontal fluoroscopy is shown by the fact that, in the writer's practice, even when the stomach is under suspicion, only the first of the ten routine observations on each case is carried out in the upright position, all the remaining nine observations giving much more information at less inconvenience when the patient is examined horizontally.

A conception of the normal intestine is essential before conclusions can be reached as to pathology of the colon; yet one hesitates to attempt a description of the normal colon. It has long since been recognized that the normal, as described from post-mortem and operating-room studies differs notably from the appearance of the living active colon as seen in the roentgen examining room. The most satisfactory study of the colon is possible only after a barium meal. The writer does not admit that the additional weight of the residue of an ordinary meal into which has been stirred two ounces of barium sulphate results in any appreciable change in the size, shape and position of the colon. How distorted the clysma-filled colon may be is easily demonstrated by a comparison of a few roentgenograms of clysma- and meal-filled colons. The Trendelenburg position may lead to serious misunderstandings as to the morphology of the colon. Manipulation is carried out much more thoroughly and satisfactorily when the colon has been filled *per os* than when filled *per rectum*, for following the enema, there is nearly always a general objectionable abdominal rigidity which is only increased by efforts to palpate.

As already suggested, the writer believes that the morphology of the colon deserves little attention, a great deal less than is usually given it. Comparative studies on the same patient under the same circumstances will easily demonstrate this. Within five or six hours, the transverse colon may assume half a dozen different shapes. The caliber of the colon changes materially from hour to hour, depending upon a number of factors, particularly upon the volume content of the colon.

Generally speaking, the writer's conception of an ideal colon is as follows: With the patient standing, the lower border of the cecum reaches as low as the iliopectineal line (Figure 1). The hepatic flexure extends upward as far as the costal margin. The splenic flexure reaches as high as the lower border of the spleen. The level reached by the lowest border of the transverse colon varies considerably in different patients, as well as at different times in the same patient. The shape of the normal colon varies with the type of individual. In short, stocky people, tending to obesity, the transverse colon, as well as the lower border of the stomach, is usually high, the lowest border of the transverse colon approaching a line joining the iliac crests. In tall, slender individuals, the transverse colon is apt to be V- or U-shaped, its lower border normally reaching several inches below the line joining the iliac crests, although in this same type of individual the transverse colon may lie well above the navel when the patient lies supine (Figure 2). The junction of the iliac and pelvic colon is well rounded out, not sharply angulated. The pelvic colon is very variable in length and disposition.

The colon should be freely movable throughout at all points which can be reached by the manipulating finger. It should be possible to move the tip of the cecum and terminal ileum upward for two or three inches. The ascending colon should be movable laterally for a distance of an inch or two. The hepatic flexure is not often within reach of the palpating fingers, although at times the right half of the colon is so very mobile that the cecum, ascending colon and hepatic flexure can all be pushed over to the left side of the midline. The transverse colon itself is rarely adherent, although sometimes it is bound down in certain positions by adhesions of the omentum. The two legs of the hepatic loop, that is the upper part of the ascending colon and the first part of the transverse colon, should be freely separable from each other. The same is true of the two legs of the splenic loop, although it is extremely rare for adhesions to exist between the two legs of the splenic loop. The descending and iliac colon are usually fairly well movable, except at the junction of the iliac and pelvic colon, where the mesocolon is normally very short. The mesocolon is also very short at the pelvirectal junction, but the pelvic colon itself should be freely movable. In heavy patients it is not always possible to test the mobility of the pelvic colon by actual manipulation of its loops, but, even in these cases, accurate deductions can be drawn from a comparison of the height reached by the pelvic loop during the filling of the colon by enema and by a meal.

An appreciation of the normal peristalsis of the colon is extremely important in connection with the subject of this symposium. The introduction of the roentgen method, especially the work of Cannon, which was carried out largely in animals, has thrown much light on colonic peristalsis. The writer's observations in man have almost to the minutest detail confirmed the work of Cannon on animals, especially in regard to antiperistalsis. The prevailing movement in the proximal colon is antiperistalsis consisting of a movement of waves backward toward the cecum. These antiperistaltic waves do not run continuously for a long time, but periodically. A series of waves at the rate of perhaps five a minute can at times be seen continuing for four or five minutes.

The distal colon has as its characteristic activities, churning and onward movements, several kinds having been described. Haustral churning is occurring constantly in the distal colon, serving to keep the material in this region thoroughly mixed with the digestive fluids, and also aiding somewhat in the onward propulsion of the bowel content. This haustral churning, or segmentation, is analogous to the segmentation which occurs in the small intestine. Other movements of the bowel are the large pendulum movements of Rieder (Figure 3), consisting of a considerable dislocation, turning and winding of these portions of the colon which have a long mesocolon, all of which occurs without any actual transportation of the contents of the bowel. These snakelike dislocatory movements occur in everybody in varying degree and with varying frequency. The recognition of these dislocatory large pendulum movements of Rieder will surely lessen any tendency to place too much stress upon the exact position and shape of the transverse colon.

It is probable that the principal propulsive movement in the colon, serving to move the bowel content from the proximal colon into and through the distal colon, is the mass movement first described by Holzknecht (Figure 4). This is a most striking phenomenon, and, when once seen, can never be forgotten. The bowel contents suddenly lose their haustral markings and are formed into an ovoid, sausage-shaped mass with perfectly smooth edges, and rounded at the ends. This mass travels at about twice the rate of peristaltic waves in the stomach, the distance traveled varying with the circumstances. As the mass comes to rest, the haustral indentations reappear, quickly if the bowel content is semifluid, more slowly if the bowel content is of firmer consistency (Figures 5 and 6). It is estimated that these mass movements occur about six times daily (Figures 7 and 8).

Holzknecht's observations were made in 1909, when he reported two cases. Occasional cases were reported by four or five other observers, but in 1913 the writer was able to report observations on thirty-seven individuals in whom this mass movement had been observed following an opaque meal.

Doubtless the respiratory movements as well as the filling and emptying of the stomach are important factors in the shifting of the bowel contents.

Various authors have constructed tables showing the rate of passage of the barium meal through the various segments of the alimentary tract.

Summarizing various observations, we may conclude that following a meal into which has been mixed two ounces of barium sulphate, the stomach should be empty within four and one half hours, at which observation the head of the barium column should have reached the cecum. The entire barium meal should have passed into the colon by the eighth, or at the most, the tenth hour, when the head of the barium column should have reached the middle of the transverse colon, or even the splenic flexure. The head of the barium column should reach the iliac colon from nine to sixteen hours following the ingestion of the meal, and the colon should be practically emptied of barium at the thirty-sixth hour.

According to Cannon, peristaltic waves in the stomach originate in a tonic constriction ring, the exact location of this ring varying with the tonus and degree of filling of the stomach. The greater the distention of the stomach, providing its tonus is not decreased, the higher will be the position of this tonic constriction ring, and peristaltic waves will be seen beginning higher in the stomach. A similar tonic constriction ring exists normally in the transverse colon (Figures 9 and 10); from it proceed the antiperistaltic waves traveling toward the cecum. In the majority of cases in which the writer has seen antiperistalsis, there have been successive waves originating in the transverse colon near the hepatic flexure.

The existence of this tonic constriction ring in the right half of the colon has been a matter of considerable discussion. It is very likely that its exact location varies with the tonicity and the degree of distention of the proximal colon, just as in the stomach the same factors govern the location of the tonic constriction ring from which the normal peristaltic waves arise. Boehm, by means of the *x*-ray, has seen, in human beings, a narrowing of the transverse colon, usually to the right of the midline, with undivided contents between it and the cecum and with segmented masses between it and the sigmoid. Aside from the writer's own published records,[2] the above observations by Boehm are the only roentgen studies on this point in man concerning which we have found a published statement, so far as the writer is aware.

Inferential evidence of the existence of this tonic constriction ring in man is afforded by numerous clinical observations, among which the two following may be especially noted: (*a*) Roith has measured very carefully the capacities of the several portions of the colon after death. His measurements confirm his observations made during abdominal operations; *viz.*, that on an average the cecum and ascend-colon contained more than twice as much as an equal length of transverse colon and three and a half times as much as an equal length of descending colon. (*b*) The content of the cecum and ascending colon is soft and mushy. The content of the distal colon may be firm and it may be even of the same consistency as the content of the sigmoid.

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[2] X-ray Observations on Colonic Peristalsis and Antiperistalsis with Special Reference to the Function of the Ileocolic Valve, James T. Case, M.D.: Proceedings of the XVIIth International Congress of Medicine, London, 1913, Section on Radiology, Vol. II.

Boehm, experimenting on cats opened under Ringer's solution, saw a definite contraction ring corresponding to the ring of Cannon. From this ring, peristaltic waves traveled toward the rectum and antiperistaltic waves toward the mouth. The antiperistaltic waves were livelier than the peristaltic waves. This ring disappeared and reappeared from time to time.

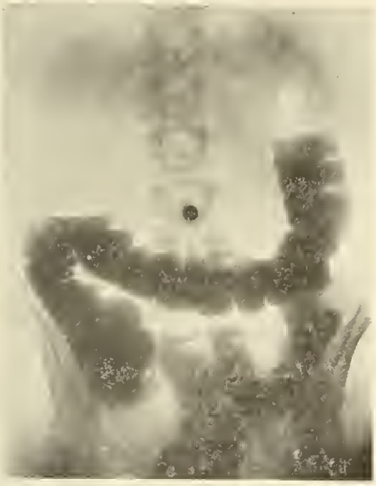

Figure 1. Practically normal colon, enema filled, patient erect. The cecum is perhaps too large.

By means of the *x*-ray, the writer has seen this tonic constriction ring in man in a number of instances. A full description of his experimental studies on this point was published in the Proceedings of the XVIIth International Congress of Medicine, above referred to, and in the *Medical Record*, March 7, 1914.

Numerous other clinical observations may be cited in support of the belief that the normal human colon exhibits the phenomenon of antiperistalsis. The most important consideration in this connection, however, is the fact that, just as in obstruction of the pyloric canal, peristaltic waves in the stomach are exaggerated and antiperistaltic waves may be seen, so in obstruction of the colon, the antiperistaltic waves are exaggerated in depth and frequency, and the point of origin of the antiperistaltic waves is moved distalward in direct ratio to the degree of the obstruction. In other words, when for any reason, an obstruction occurs in the distal colon, the antiperistaltic influences, which are normally seen in the right half of the colon, are exaggerated.

Anschütz, Kreuter and Roith have observed that in patients with obstructing tumors of the pelvic colon, gangrene of the walls of the cecum may occur. It was noticed in several cases that the distal part of the large intestine near the tumor was contracted, whereas the cecum was very much distended. This condition must have been brought about through exaggerated antiperistalsis (Figures 11 and 12). In other cases, lycopodium administered in enemas before operation has been found in the cecum at the time of operation. Retrograde filling of the colon is a constant finding after the operation of ileosigmoidostomy (Figures 13, 14, 15, 16). In every one of more than forty cases in which the writer has made an *x*-ray examination following ileosigmoidostomy (three months to three years following the operation) retrograde peristalsis in the left half of the colon has been observed.

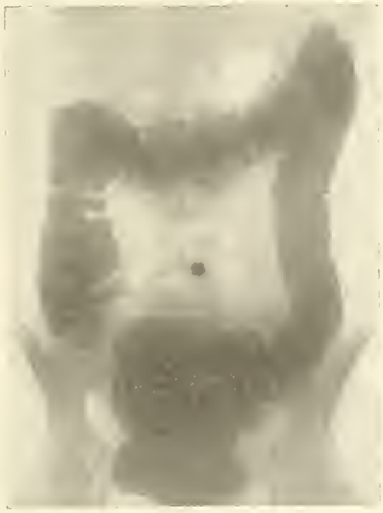

Figure 2. Ideal colon, enema filled, patient prone.

Thus we may assume that when, for any reason, the colon is hypertonic, or its content increased through obstruction in the distal colon,

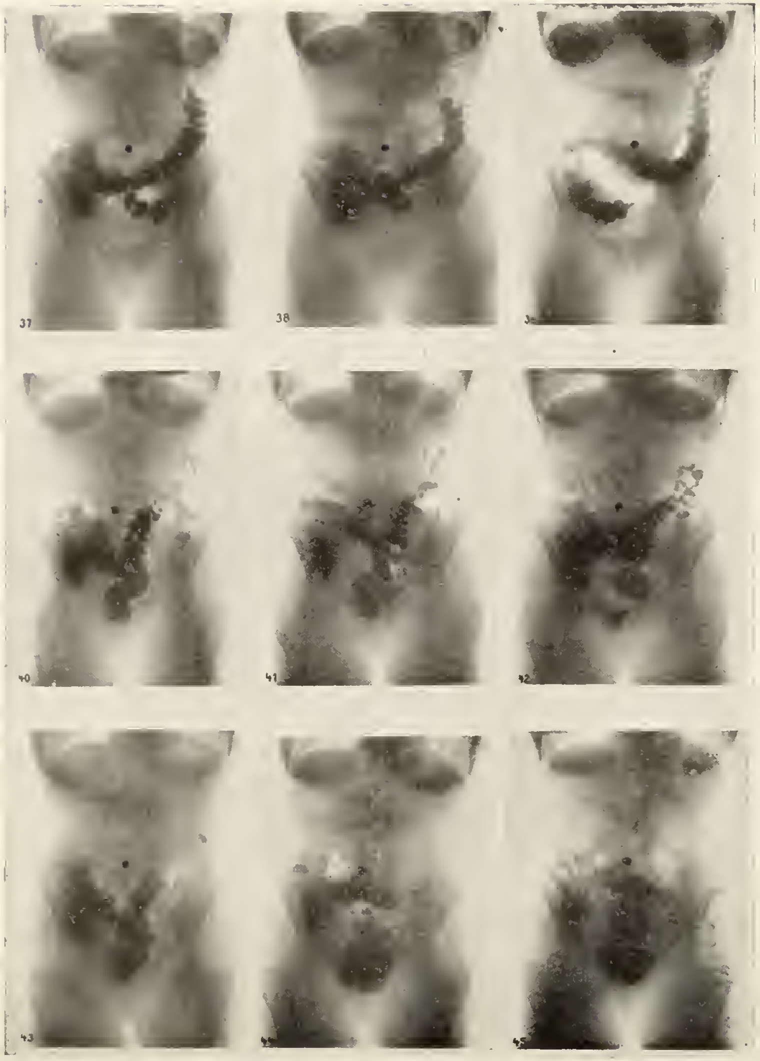

Figure 3. A series of nine roentgenograms (Rieder) made at half-hourly intervals, all conditions being the same except for the influence of peristalsis. Note the changes in the position and shape of the transverse colon which Rieder described as large pendulum movements.

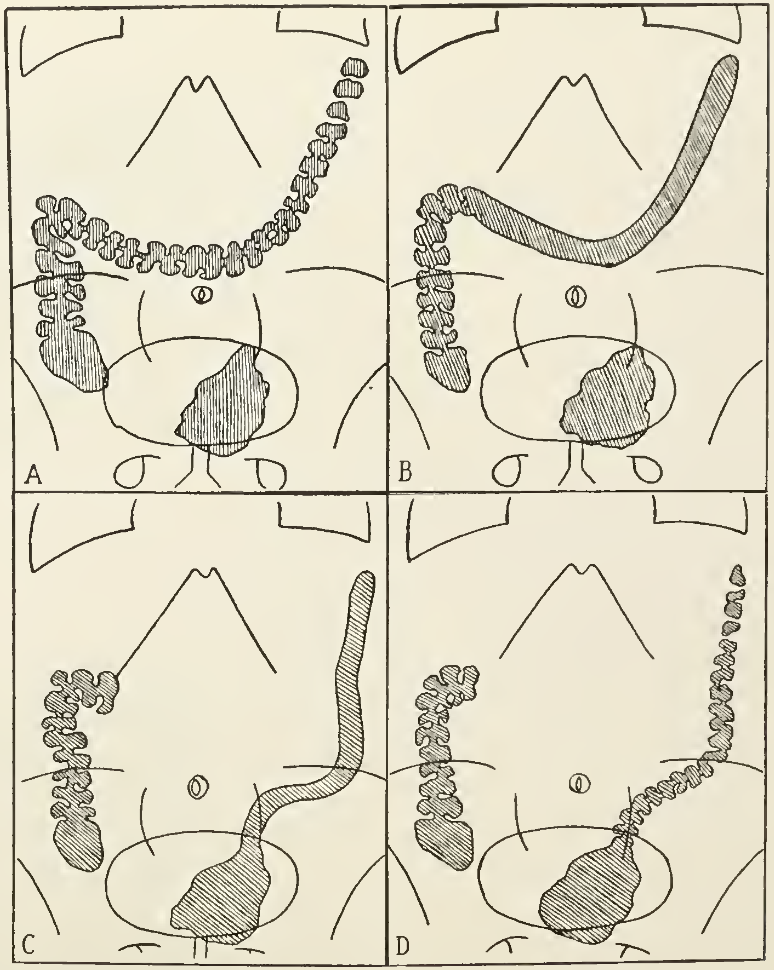

Figure 4. Four drawings from Holzknecht's original article illustrating the mass peristaltic movement. In *a* the colon is uniformly filled from cecum to splenic flexure and the indentations due to the haustral contractions are nicely seen. In *b* these haustral markings have disappeared from the hepatic flexure on. In *c* the content of the transverse colon has moved over into the descending and iliac colon, the haustral markings not yet having appeared. After some minutes, fifteen or twenty, the haustral markings reappear as shown in *d*.

the location of the tonic constriction ring from which the antiperistaltic waves originate, moves distalward; so that, in the severest cases, the antiperistaltic waves may have their origin down in the true pelvis. The writer has seen a bolus of barium-mixed food, the size of one's thumb, pass within a couple of minutes from the true pelvis backward into the ascending colon.

The most frequent finding in constipated individuals is a marked spasticity of the left half of the colon, especially the iliac and pelvic colon (Figure 17). Normally one may consider that the right half of the colon has a caliber twice that of the left half, but in spastic conditions, the caliber of the distal portion of the bowel, especially the iliac and pelvic colon, may be still narrower. A careful study of a small series of normal colons and a large series of spastic colons has enabled the writer to construct a table of comparative measurements of the various parts of the colon. After the injection of 1200 c.c. of opaque enema, the following may be taken as the average diameters of the various segments of the adult colon on a roentgenogram made at a focus-skin distance of twenty-six inches, the patient lying prone upon the plate:—

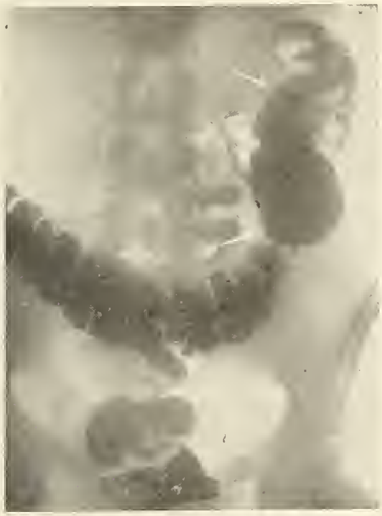

Figure 5. A roentgenogram made shortly after a mass movement has come to rest. The smooth-edged bolus is seen occupying the upper part of the descending colon. See Figure 6.

	Normal Colon.	Spastic Colon.
Cecum	6.0 cm.	6.0—10.0 cm.
Ascending colon	5.0 cm.	5.0— 7.0 cm.
Transverse colon	5.0 cm.	4.0— 6.0 cm.
Descending colon	4.5 cm.	3.0— 4.0 cm.
Iliac colon	4.0 cm.	2.0— 3.5 cm.
Pelvic colon	3.5 cm.	2.0— 3.0 cm.

This spasticity of the left half of the bowel may be indicated roentgenologically in several ways:—

1. Following the ingestion of a barium meal, the barium residues in the left half of the bowel may be distributed in isolated boluses (Figure 18). The more spastic the bowel, the more characteristic is this appearance.

2. On administration of the barium enema, it is observed that a few ounces of liquid will suffice to fill the colon as far as the splenic flexure, the barium column shooting up the contracted iliac and descending colon in a thin, quick-flowing stream suggesting the passage of a column of fluid up a burette. The ileocecal valve is usually found incompetent in these cases.

3. There is seen an actual delay of the intestinal contents in the proximal colon, the cecum and ascending colon remaining widely filled with barium, perhaps as late as the fiftieth hour following the opaque meal (Figures 10 and 19). That this is due to antiperistalsis is strongly suggested by the fact that upon the administration of the common laxatives, which Abt has shown practically all cause irritation, the distention of the cecum and ascending colon becomes more marked and actual antiperistalsis may be observed.

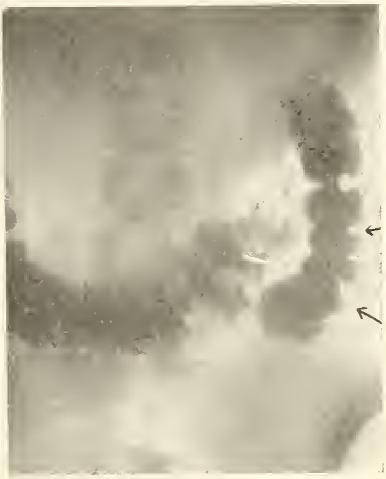

Figure 6. The smooth-edged mass referred to in Figure 5 now shows serrated margins, owing to the gradual indentation of the reoccurring haustral markings.

4. Sometimes actual strings of mucus may be demonstrated within the bowel. The appearance of barium-impregnated mucus may be in flecks distributed over the surface of the bowel or in long strings which are easily dem-

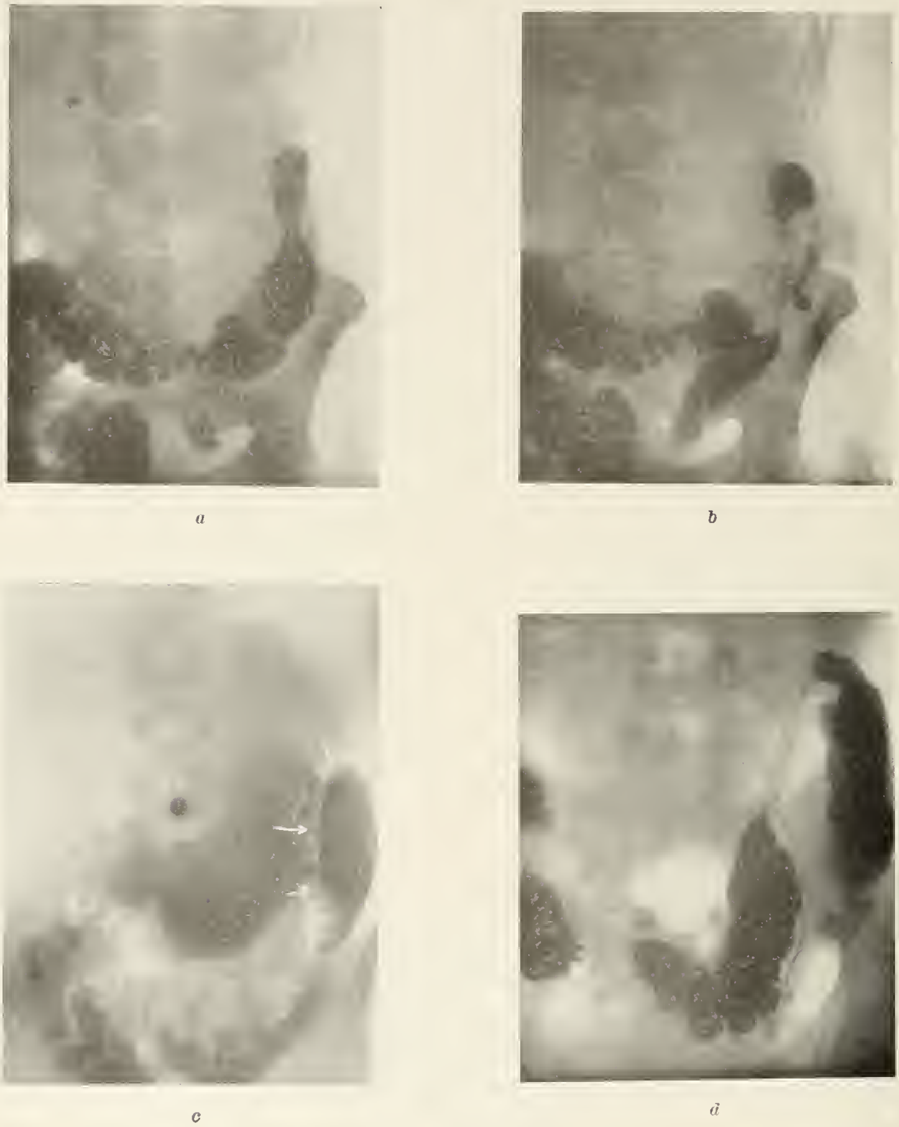

Figure 7. **Mass peristaltic movements.** *a*. A mass peristaltic movement just occurring, having rounded the splenic flexure. *b*, the same mass seen in *a* passing into the pelvic colon. *c*, an active mass peristalsis shown at the splenic flexure. *d*, several mass peristaltic movements seen at once. These roentgenograms must be made instantaneously as the mass movements are rapidly moving.

onstrated on screen examination (Figure 20).

This condition of spasticity of the iliac and pelvic colon is very often associated with adhesions. These adhesions are demonstrable in various ways,—occasionally by the roentgenographic appearance of the bowel (Figure 21). A more reliable estimate as to the presence or absence of adhesions is obtained through inability to move this portion of the bowel by manipulation under the fluorescent screen, or failure of the pelvic loop to move upward during the colon injection in the way we believe it should under pressure of the enema. These adhesions of the pelvic colon often involve the left tube and ovary in cases where the closest inquiry into the history does not suggest that there has been any inflammation of the uterine adnexa. It is probably not within the province of this paper to discuss the origin of these adhesions, but the writer feels constrained to mention the work of J. Rilus Eastman, who through intermittent ligation of the anus in rabbits, brought about the production of pericolonic adhesions, although control rabbits failed to show them.

The pelvic colon is normally a reservoir in which occurs the collection of bowel residues until such time as the pelvic loop is filled

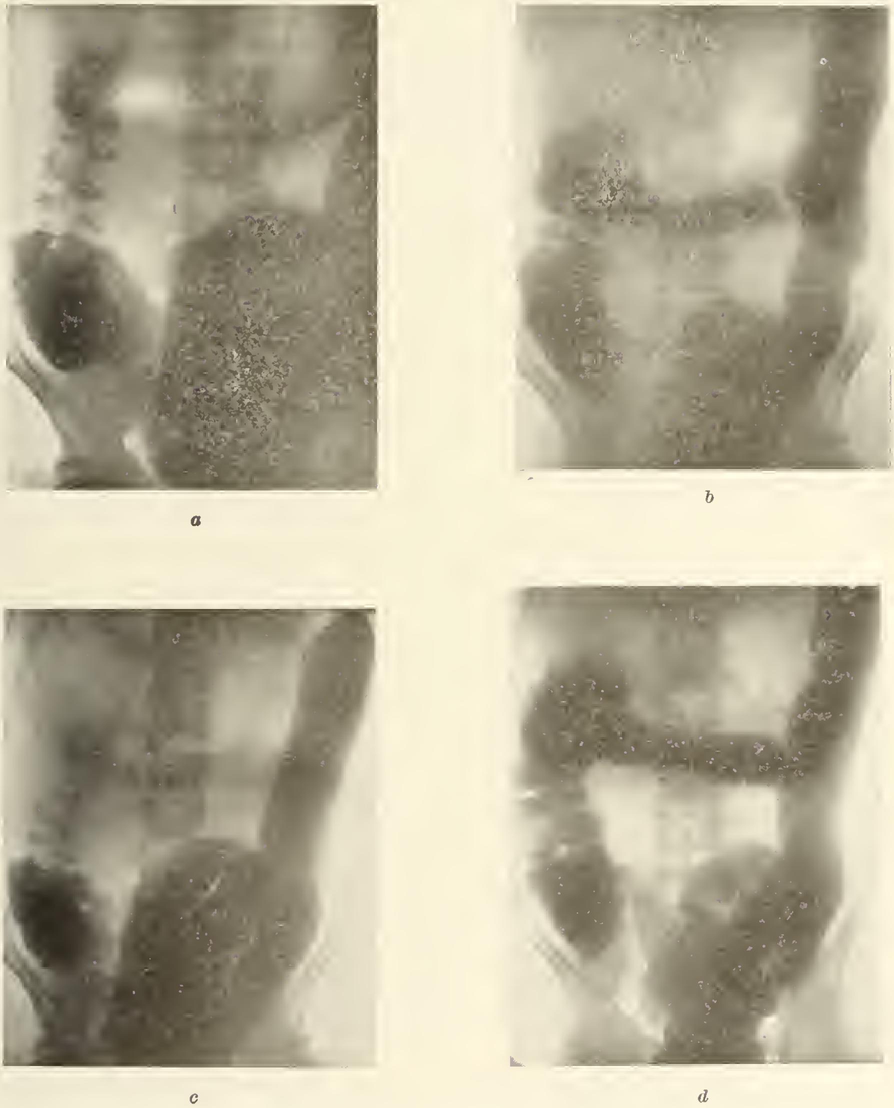

Figure 8. Four roentgenograms of the enema-filled colon, illustrating powerful ring contraction waves analogous to the mass movements seen with ingested food. These roentgenograms are all of the same patient, and were made at intervals of only one or two minutes. In *a* the colon from ileocolic junction to splenic flexure has been emptied by a powerful ring contraction. In *b* the contraction has relaxed, allowing the fluid enema to pass back into the proximal colon. Actual antiperistaltic waves were seen in the ascending colon. In *c* the right half of the colon is again emptied and in *d* again refilled. Again several antiperistaltic waves were observed in the ascending colon.

(Figure 22). Then mechanically the head of the fecal mass enters the rectal ampulla, the defecation reflex is stimulated, and the patient, when normal, is conscious of the filled bowel. When, for any reason, the patient ignores this reflex, and this is especially likely to occur with the much-occupied professional or business man, the bashful school girl, and other classes of individuals in whom spasticity of the colon, not associated with colitis, is very common, the result is a condition of rectal stasis called dyschezia. When it exists, we may assume that the conditions are favorable for the development of colitis, with later a subinfection of the pericolonic tissues and resulting pericolonic adhesions. The roentgenologic appearance under these circumstances is a marked spasticity of the bowel, as above described.

It is noticeable that the stasis in these cases does not occur in the left half of the colon just proximal to the spastic, adherent portion, but as far as possible from it, that is, in the cecum and ascending colon, to which point the bowel contents are carried by the exaggerated antiperistaltic influence which results from the spasticity. Even with carcinoma of the distal

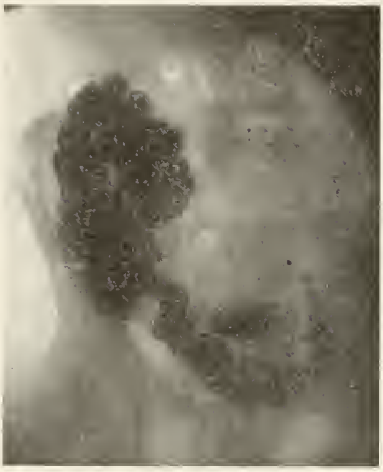

Figure 9. Cannon's ring in the transverse colon just to the right of the midline. Note how the contents of the proximal bowel are held back by antiperistaltic waves, as Cannon has shown.

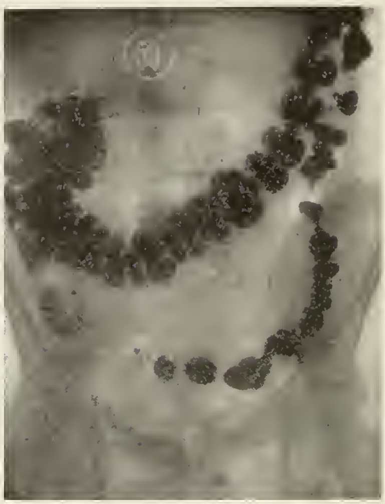

Figure 10. Roentgenogram made at the fiftieth hour in the same case illustrated in Figure 9. Note the spasticity in the left half of the bowel. Right half of the bowel still filled at the fiftieth hour; marked delay.

colon, as in the pelvic colon, for instance, there is a tendency for the stasis to occur in the proximal colon (Figures 11 and 12). There is often seen in these cases of organic obstruction in the distal colon a condition which the writer has termed "peristaltic unrest" (Figure 7-*d*), signifying the appearance due to alternating peristaltic and antiperistaltic influences. Thus, at one observation one may find the colonic contents banked up in the distal colon just above the obstruction, and again it will be seen in the proximal colon as far as possible from the obstruction. The latter disposition of the fecal content is apt to predominate.

It is a striking thing that in practically all these cases of stasis in the proximal colon, the appendix shows signs of chronic periappendicular adhesions. These adhesions often involve the mesentery of the terminal ileum in a manner to produce a Lane's kink of the terminal ileum (Figure 23). The writer does not hesitate to recognize that certain of these membraniform adhesions are congenital, or at least an effort of Nature to compensate for an unusually loose attachment, and that in other cases they are undoubtedly the result of repeated attacks of acute appendix infection; but, in many cases, these adhesions in the ap-

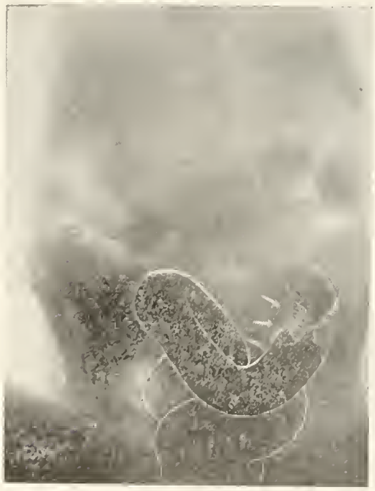

Figure 11. Semi-diagrammatic roentgenogram of a carcinoma of the iliac colon. An enema has been given filling the rectum and pelvic colon, only a trace passing above the tumor. See Figure 12.

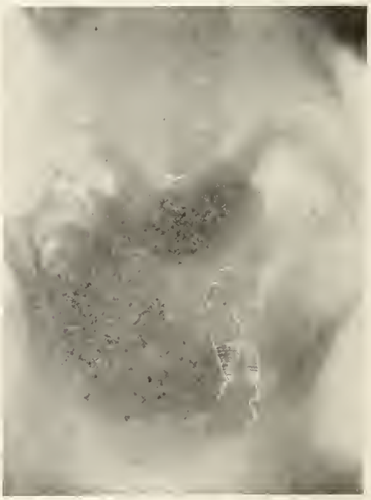

Figure 12. Semi-diagrammatic roentgenogram of the case shown in Figure 11, but fifty hours p.c. The enema below the tumor has been expelled. The right half of the bowel is densely filled and a powerful antiperistaltic ring contraction wave is seen in progress at the point in the transverse colon indicated by an arrow.

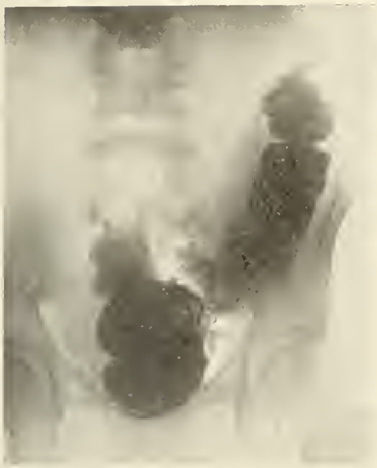

Figure 13. Roentgenogram at the ninth hour following a barium meal in a case of ileosigmoidostomy with removal of the colon from cecum to middle of transverse. Note that regurgitation into the short-circuited colon has already occurred.

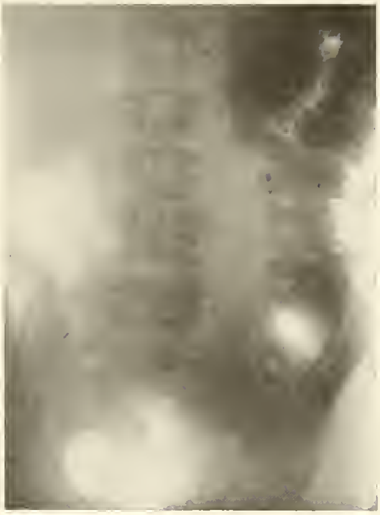

Figure 14. The same case as Figure 13 three days later. Note that the blind end of the colon is still widely distended.

pendical region can not thus be accounted for by the closest scrutiny into the patient's history.

That there is a sphincteric mechanism at the orifice of the appendix seems reasonable. The oblique insertion of the appendix into the cecum may serve to accentuate the effect of a sphincteric mechanism. The writer has often seen at operation appendices which were perfectly normal, the lumen being perfectly patent, but which refused to permit the entry of the barium-mixed cecal content. We will assume that this valve or sphincteric mechanism normally prevents the entry of the cecal contents into the appendix. Under conditions of cecal stasis, however, especially when the antiperistaltic influence is sufficiently marked to bring about distention of the cecum, it is observed that fecal matter may be forced into the appendix, where it is retained for a varying period of time. In some very large-lumened appendices, the entry and exit of fecal matter is easy, and there is no appendical stasis; but in most cases, the barium-mixed feces which enters the appendix remains there for many days. In fact, it may remain as long as six or seven

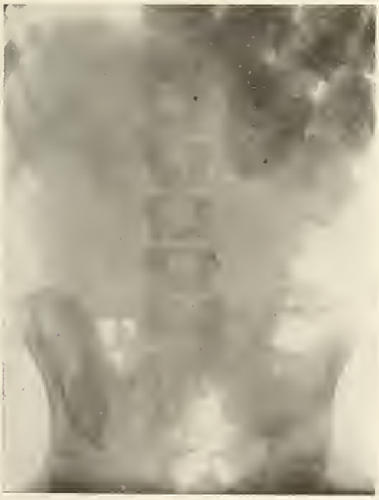

Figure 15. Same case shown in Figures 13 and 14, illustrating the residue in the stump of short-circuited colon on the ninth day after the barium meal, and this in spite of repeated enemas.

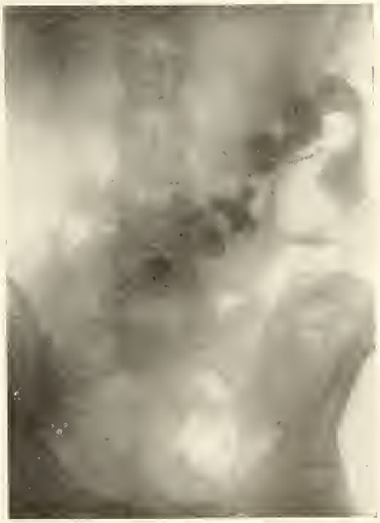

Figure 16. Regurgitated residue in the transverse colon at the fiftieth hour in a case of ileosigmoidostomy without colectomy. For six or eight months, the patient was greatly improved, and then again gradually developed symptoms of toxemia and gas distention of the transverse colon.

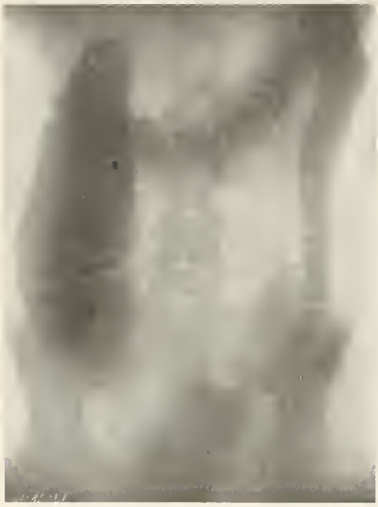

Figure 17. Enema-filled colon. Marked spasticity of the iliac and pelvic colon; marked dilatation of the right half of the bowel; ileocecal valve incompetency.

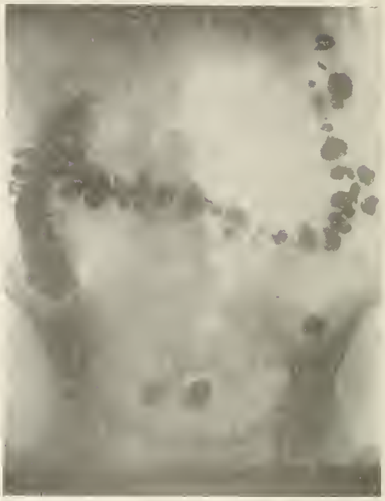

Figure 18. Spastic colon at the fiftieth hour following the barium meal. Note the isolated boluses, the spasticity being especially marked in the pelvic colon.

weeks. This appendical stasis brings about a condition of subacute inflammation surrounding the appendix, producing adhesions and the other appearances commonly seen in the so-called chronic appendix. That in many cases this condition of the appendix is not a primary one, the removal of which will cure the patient, is proven in the experience of every surgeon. A surprisingly large percentage of patients examined by the writer for gastrointestinal conditions have had the appendix removed, without relief except for a period of three to six months following the operation.

Ileocecal valve incompetency as a cause of stasis may become active through the same mechanism (Figure 24). Dilatation of the cecum produces a relative incompetency of the valve somewhat analogous to the relative insufficiency of the heart valves occurring in dilatation of the heart. The writer's belief is that this valve mechanism is normally sufficient to prevent the reflux of cecal content back into the ileum. Under the conditions of cecal stasis which we are describing, the one-way valve action is no longer effective and the result may be an ileal stasis brought about in one of at least two ways: (*a*) Through actual antiperistaltic influences forcing back into the ileum material which has already once passed the valve from the ileum into the cecum; or (*b*)

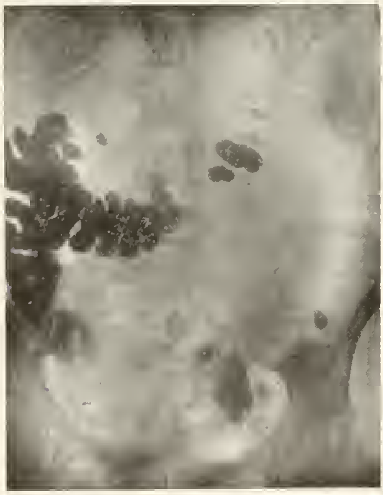

Figure 19. Roentgenogram fifty hours following the barium meal. Note delay and distention of the right half of the bowel.

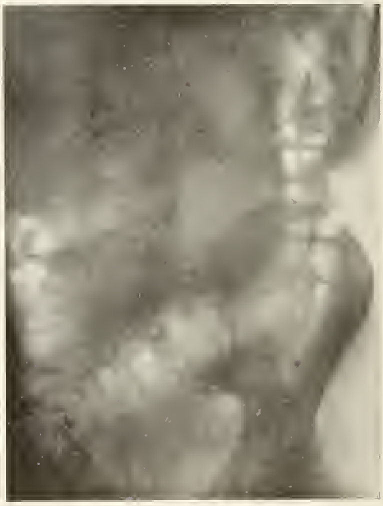

Figure 20. Strings of mucus nicely seen in the gas-distended splenic loop. The mucous strings show by reason of barium which has been enfolded.

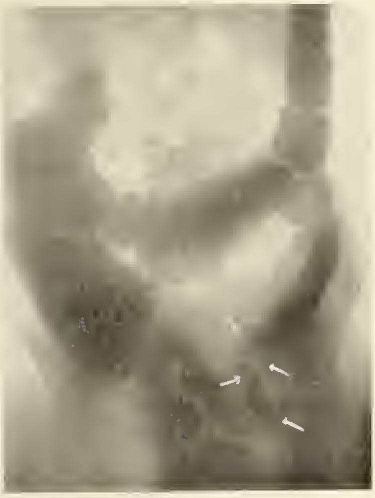

Figure 21. Characteristic appearance of the pelvic colon due to adhesions. Colon enema filled.

while not actually forcing cecal material back into the ileum, insufficiency of the valve lessens the *vis a tergo* so that there is an actual slowing of the ileal stream which will be, in effect, a condition of stasis.

Anatomical studies have shown that some ileocolic valves are incompetent through congenital inequality and resulting faulty closure. Potators are especially subject to insufficiency of the ileocolic valve.

Other causes of ileal stasis are Lane's kinks of the ileum. No space need be devoted here to the theory of the development of these kinks. In most instances the writer does not attach very much importance to their presence. In a series of several thousand examinations, during which hundreds of Lane's kinks have been demonstrated both roentgenologically and at operation, not more than fifteen or twenty have been found actually obstructing (Figure 25). In fact, in most cases where obstructing kinks have been found, ileocecal valve incompetency has also been found. It is possible that in some cases a spasm of the ileocecal sphincteric mechanism may also have been a factor in the production of ileal stasis (Figure 26). It seems that there are at least three common causes of ileal stasis, of which one, two or all three may be active in any given case. A large proportion of cases of colonic constipation show insufficiency of the ileocecal valve. Lack of time will prevent any further mention here of the writer's work on the function of the ileocecal valve. This subject has been discussed in various articles both by myself and by J. H. Kellogg.[3]

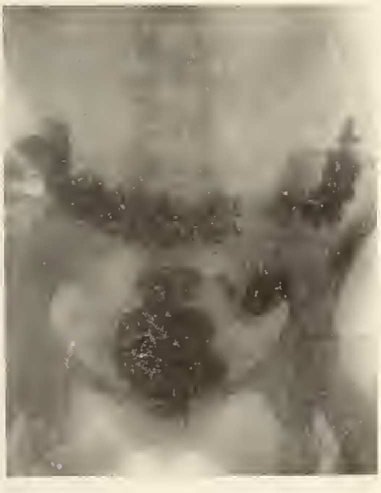

Figure 22. Illustration of the reservoir action of the pelvic colon. Bit by bit food is carried from the proximal colon into the pelvic colon. One bolus is shown in transit While this roentgenogram was being made, this patient experienced an almost irresistible desire to empty the bowel.

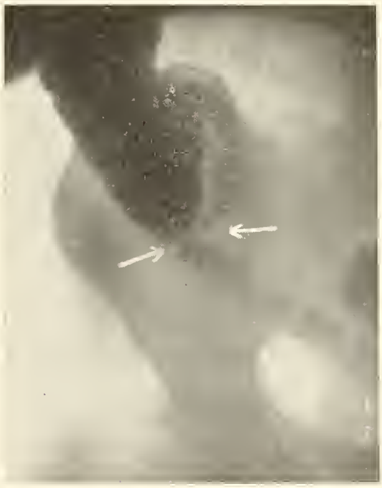

Figure 23. Adhesions of the terminal ileum associated with appendix disease.

Briefly it may be stated that we are convinced of the importance of ileocolic valve incompetency as a factor in the production of

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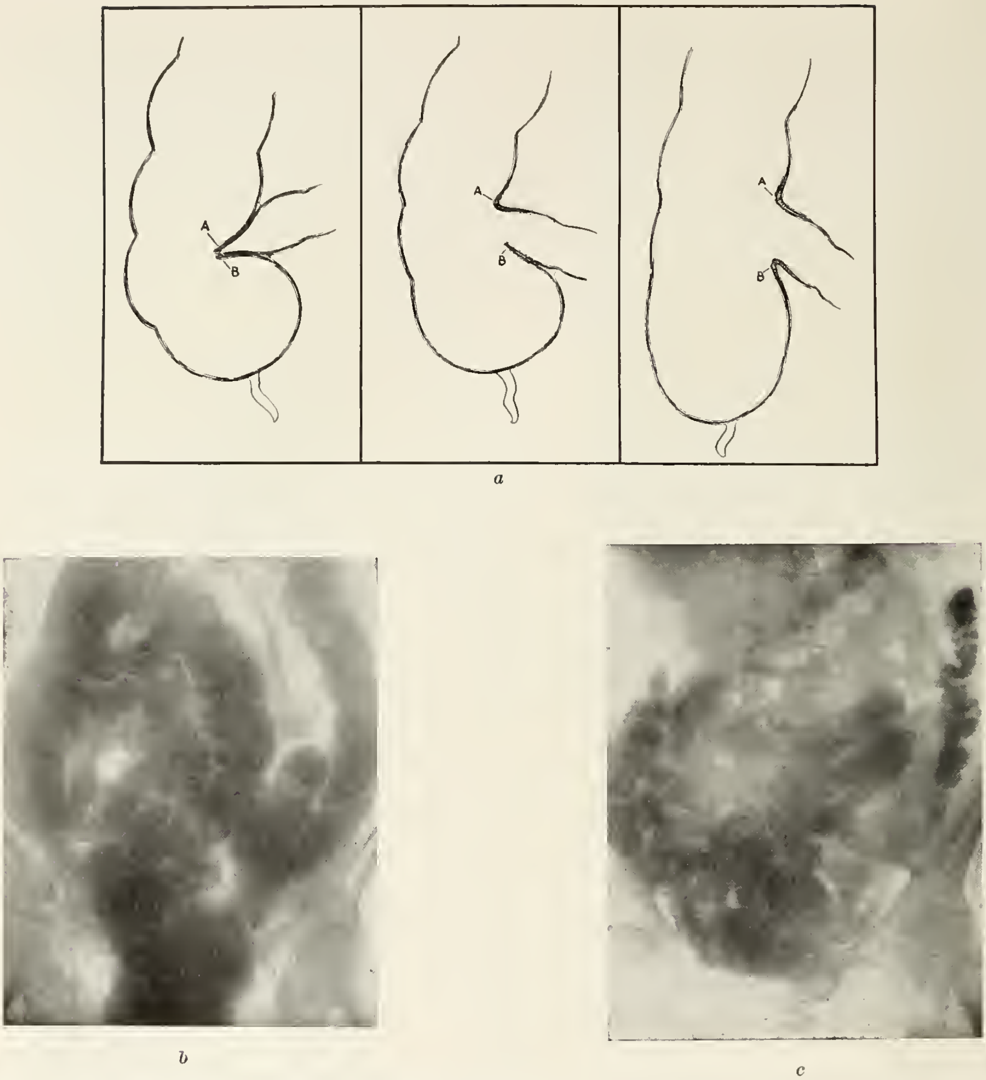
[3] X-ray Studies of the Ileocecal Region and the Appendix, James T. Case, M.D.; published in the *American Quarterly of Roentgenology*, November, 1912. Incompetency of the Ileocecal Valve—Disorders Arising from This Condition and Their Treatment, J. H. Kellogg, M.D.; published in the *Medical Record*, June 21, 1913. Surgery of the Ileocecal Valve, J. H. Kellogg, M.D.; published in *Surgery, Gynecology and Obstetrics*, November, 1913. Further Studies on the Ileocecal Valve and Appendix. James T. Case, M.D.; published in the *American Journal of Roentgenology*, August, 1914. Roentgenologic Observations on the Function of the Ileocolic Valve. James T. Case, M.D.; published in the *Journal of the American Medical Association*, October 3, 1914. A Critical Study of Intestinal Stasis Including New Observations and Conclusions Respecting the Causes of Ileal Stasis, James T. Case, M.D.; published in *Surgery, Gynecology and Obstetrics*, November, 1914.



a

b

c

Figure 24. Three illustrations of ileocecal valve incompetency. *a*, three diagrams by Kellogg after Hertz (Vienna), the first showing a normally invaginated ileocolic junction, the second showing the upper lip disinvaginated, the third showing both lips disinvaginated. In *b* is shown the results of an enema in a case clinically diagnosed chronic bowel obstruction. *c* shows the enema filled small bowel after expulsion of the enema in the same case.

ileal stasis. This is probably the essential factor in the majority of cases of ileal stasis, even when Lane's kink of the ileum exists. It is true many patients with insufficiency of the ileocolic valve do not exhibit symptoms of alimentary toxemia. This does not by any means signify that the ileal stasis or the ileocolic valve incompetency is normal. We may repeat the query made in one of the opening paragraphs; *viz.*, must we not recognize that every patient with intestinal stasis has a potential alimentary toxemia? And because a patient with alimentary stasis is at present apparently symptomless, are we satisfied that the stasis may be disregarded?

Surely the question of ileocolic valve incompetency is of sufficient importance to warrant further study. Interest in this matter has grown considerably of late, and doubtless before very long we shall be able to present clinical data which will either affirm or deny the ideas which have been put forth. Already J. H. Kellogg, R. H. Harris and the writer, during laparotomy for other cause demanding abdominal section, have taken advantage of the opportunity to repair the ileocolic valve in more than one hundred and fifty cases. Some of these cases are now three years old. Inquiries are being conducted, the outcome of which will be watched with considerable interest. We are already strongly impressed with the clinical improvement in the cases upon which the op-

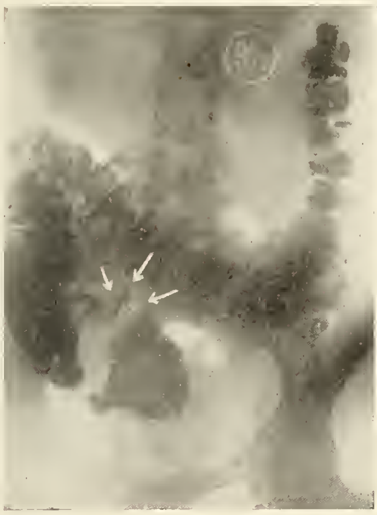


Figure 25. Obstructing Lane's kink of the ileum shown at the arrow. Roentgenogram at nine and one half hours following the barium meal. Note the marked residue still in the terminal ileum.

cration of ileocolic valve repair has been done.

In no instance has ileocolic valve incompetency been considered *per se* an operative indication. Ileal stasis attending ileocolic valve incompetency is a secondary condition, an end result. Ileocolic valve repair will therefore always be done in connection with other operations or other therapeutic efforts calculated to overcome the original causes which led to the incompetency. The great majority of cases of ileal stasis associated with ileocolic valve incompetency can be relieved by non-surgical means. Many of the effects of the stasis can be overcome by quickening the intestinal stream, by the use of enemas, paraffin oil, etc., but where it is seen that surgical intervention is demanded, it is highly important to recognize the physiological principles which the writer has attempted to set forth in the foregoing pages.

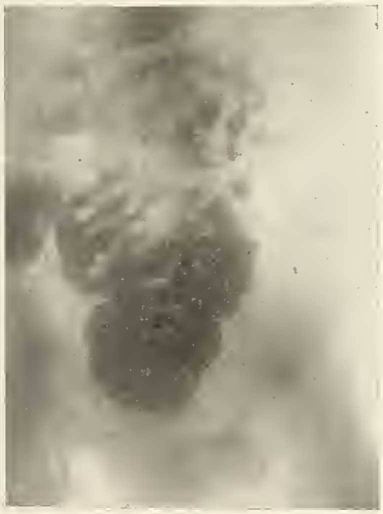


Figure 27. Ileal stasis due to peritoneal tuberculosis.

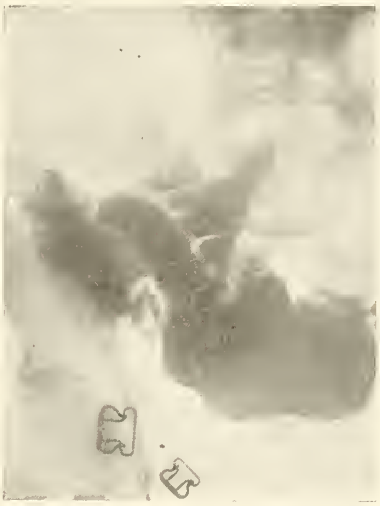


Figure 26. Case of spasm at the ileocecal orifice, probably a spasm of the ileocecal sphincter.

Ileocecal or peritoneal tuberculosis (Figure 27), carcinoma of the cecum, anomalous congenital conditions, intussusception and other rarer organic lesions are, of course, to be considered as causes of ileal stasis. All of these may be demonstrated roentgenologically.

Jackson's membrane may be considered a cause of constipation in certain cases, especially where the upper fibers constrict the bowel. In these cases of obstructing Jackson's mem-

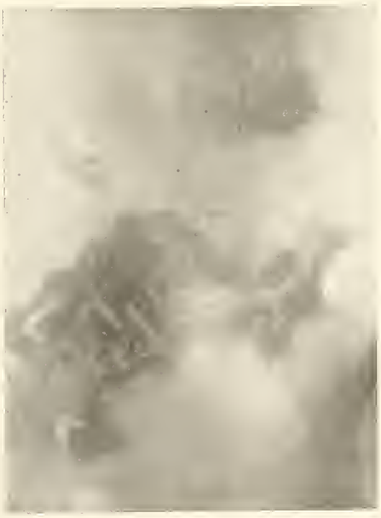


Figure 28. Ileal stasis due to multiple adhesions about the cecum (congenital condition).

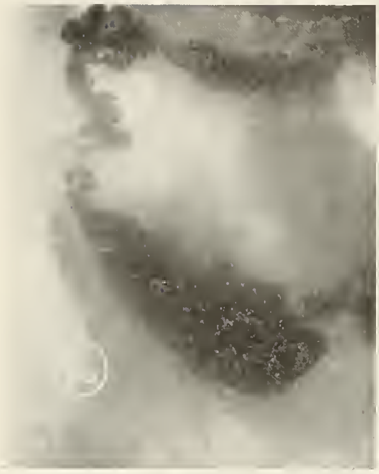


Figure 29. Marked dilated, atonic cecum, due to constriction of the ascending colon by Jackson's membrane.

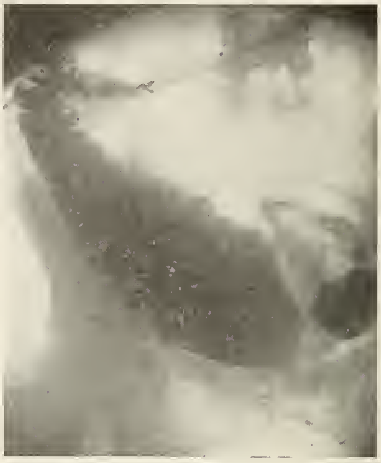


Figure 30. Same case shown in Figure 29 following the attempt to expel the barium enema.

brane, there is always noted a tremendous enlargement and prolapsus of the elongated, mobile cecum (Figures 29 and 30).

We commonly meet in our examinations a moderate enlargement of the cecum of the type just mentioned, the lower border reaching well to the pubic bone and its left border reaching past the midline. Under careful manipulation, extreme mobility of this class of cecum is usually demonstrable. In the majority of instances, there is no cecal stasis, although the presence of membraniform adhesions between the parietal wall and the ascending colon can usually be demonstrated. It is probable that these adhesions are not a menace to the patient, but help only to suspend the colon which would otherwise have too free an attachment. In general, there is no stasis in these moderately enlarged, mobile ceca; as a rule it is the adherent cecum which is the seat of stasis, not the mobile cecum. The writer has shown, by numerous observations, that when the cecum is adherent, the onward propulsive waves do not begin at the very tip of the cecum, but above the ileocecal orifice.

Sometimes adhesions exist between the two legs of the hepatic loop. When these adhesions are formed by an extension of the parietocolic band, so common along the ascending colon, they are usually attended by stasis in the right half of the colon (Figure 31). The stasis does not seem to be due to any actual obstruction or kinking, but rather to a shackling, so to speak, of the wall of the bowel, so that it can not properly take part in the normal mass peristaltic movements which are the principal onward propulsive activity of the colon. Ad-

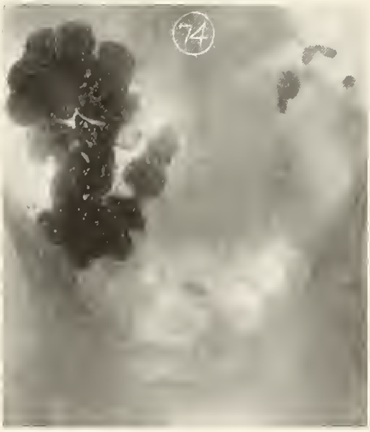


Figure 31. Stasis in the right half of the colon at the seventy-fourth hour due to the shackling effect of multiple loose adhesions.

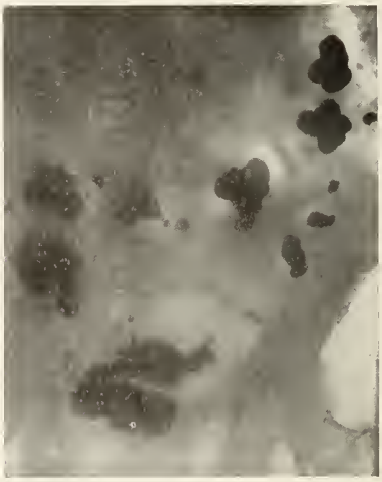
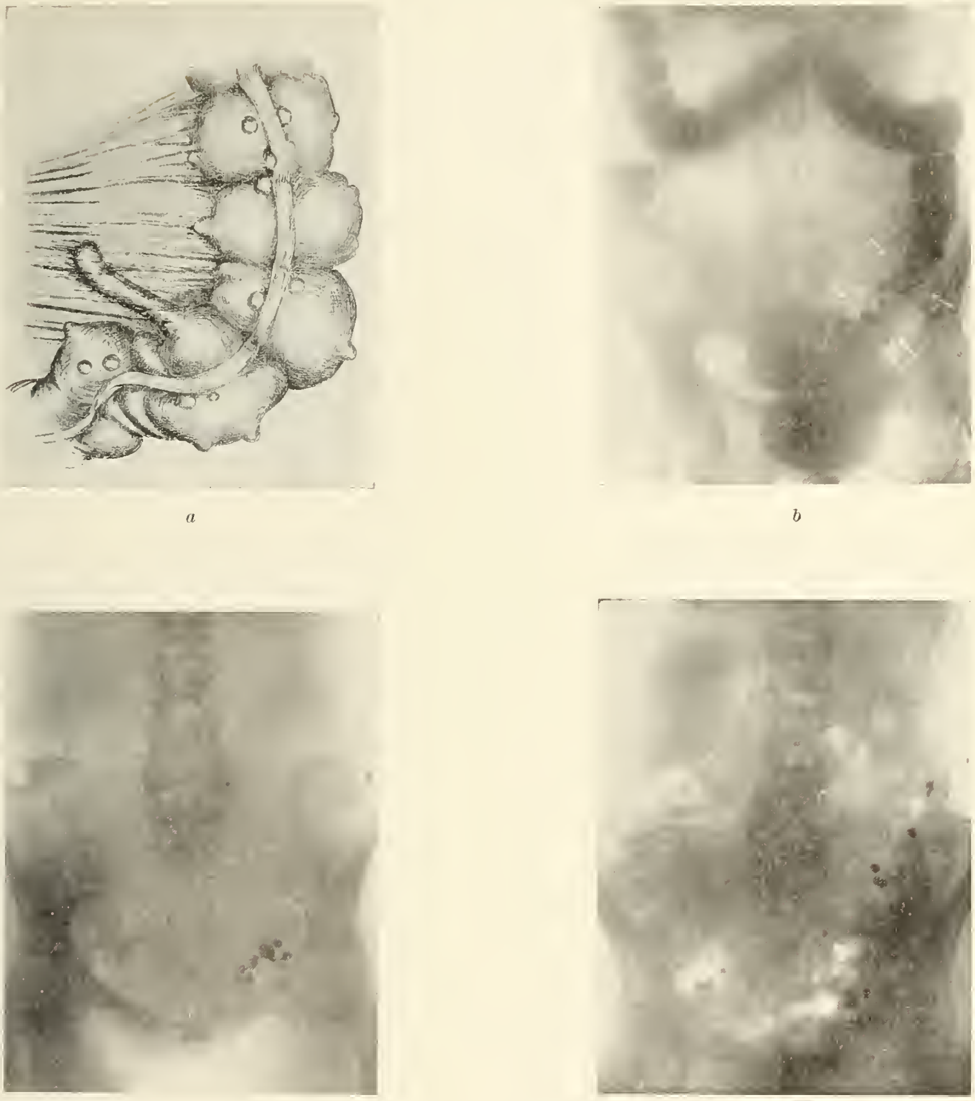


Figure 32. Appearance of the colon twenty-six hours p. c. in a case of paraplegia.



a *b* *c* *d*

Figure 33. Multiple diverticula of the colon. *a*, a drawing from Mummery showing the anatomical appearances of the diverticula. *b*, roentgenogram seventy-four hours p.c. and following a colon injection in a case of multiple diverticula with tumor in the left iliac fossa. *c*, a case of relatively few diverticula bunched in a mass favoring the development of tumor. *d*, a few scattered diverticula without any surgical significance.

hesions between the two legs of the splenic loop are not so easily demonstrable, for the splenic loop is usually high up under the ribs where manipulation is not possible. Adhesions between the two legs of the splenic loop are not common. The writer has seen very few cases of obstruction at the splenic flexure except in malignancy. The obstruction due to a pelvic tumor is not so marked as might be expected, unless the bowel is adherent to the tumor. The mere fact that the bowel is adherent does not mean obstruction. The adhesions must also fix the bowel or actually constrict its lumen in order to produce obstruction.

Enterospasm may be due either to a colitis or to some neuromuscular condition, such as tabes dorsalis, hyperthyroidism, paralysis agitans and other neurological conditions. The spasticity associated with these neuromuscular conditions usually involves the entire colon (Figure 32), although the pelvic colon suffers most. The spasticity due to or associated with colitis is localized, being especially manifest in the iliac and pelvic colon (Figure 18). A persisting spastic contraction of a segment of the bowel offers an obstruction which may be as serious in its resulting alimentary toxemia as an organic lesion. It is sometimes noted

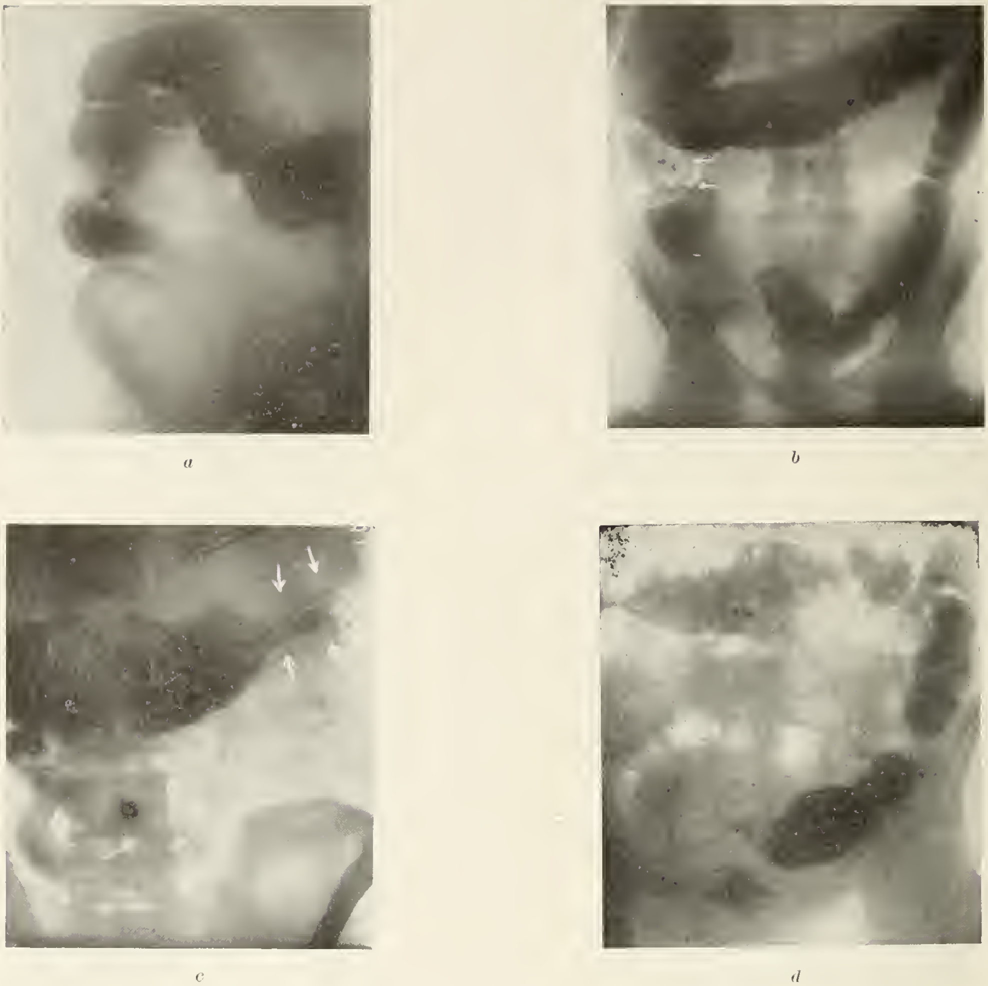


Figure 34. Carcinoma of the colon. *a*, carcinoma opposite the ileocecal orifice. *b*, filling defect simulating carcinoma of the ascending colon. Really it is due to a peristaltic contraction which started at the ileocecal orifice. *c*, carcinoma of the splenic flexure. *d*, carcinoma of the pelvic colon.

that associated with spasticity in the distal colon there is a dilatation of the proximal colon with, in the end, an atonic condition of the bowel musculature in the cecum and ascending portion. This kind of constipation is what the Germans have termed dyskinetic constipation.

Some cases of spasticity of the colon are seen to be associated with multiple diverticula (Figure 33-*a*). The first papers on sigmoidal diverticula recited cases in which there was a fairly complete picture of a condition in the lower left quadrant of the abdomen analogous to appendicitis in the lower right quadrant. These cases studied and reported up to the present time have been those attended by a tumor mass (Figure 33-*b*) requiring surgical interference. It is a well known fact that these cases may develop gross obstruction from scar formation; peritonitis or pericolitis; adhesions usually between the sigmoid colon, small bowel or uterine appendages in women; abscess formation with or without the occurrence of fistulæ into the bladder; degeneration into carcinoma, as shown by Wilson and Giffin. The writer has recently reported twenty-eight cases of multiple diverticula of the colon, in half of which the more serious symptoms were lacking. In this half of the cases, there was no actual obstruction due to narrowing of the lumen of the bowel; the diverticula were few and scattered (Figure 33-*d*). Practically all of them had been unsuspected. The principal symptom was enterospasm. Most of the writer's cases discovered roentgenologically were sent to him with a clinical diagnosis of spastic constipation or colitis. Recognition of this type of functional colonic obstruction may lead to an early diagnosis of a condition which, in its later stages, is strictly surgical.

The roentgenologic appearances of colonic diverticula are characteristic. Following the passage of an opaque meal through the colon, one observes small, rounded shadows, evidently residues of the opaque salt, in the affected areas, usually near the junction of the iliac and pelvic colon. These rounded shadows usually occur in groups, always maintaining the same relation to each other. They are best seen on the second or third day after the meal (Figure 33-*c* and Figure 33-*d*), when, by careful screen study, especially during manipulation of the iliac and pelvic colon, one may detect the presence of these rounded shadows shortly after the opaque meal reaches the affected segment of the bowel. Stereoroentgenograms often show conclusively the relation of these small rounded shadows to the bowel. It most often happens, however, that the barium residues are not recognized until the second or third day, after most of the meal has been evacuated. It is then especially illuminating to administer a barium enema, studying the relation of the rounded shadows to the enema-filled bowel (Figure 33-*b*). This study may be carried out fluoroscopically, but roentgenograms are especially graphic, and in view of the rarity of the situation, are especially desirable. As above mentioned, stereoroentgenograms furnish the most decisive evidence.

Stasis, associated with the enterospasm attending a few diverticula, is perhaps one of the most baffling from a therapeutic standpoint. One hesitates to recommend surgical interference in cases of few diverticula and no tumor mass. It is evident that the toilet of the bowel demands careful attention. The writer has recommended the administration of bismuth oxychlorid or bismuth subcarbonate. The use of bismuth subnitrate is probably not advisable, as it is now recognized that the cases of poisoning with bismuth subnitrate was not from the contamination of the bismuth salt with arsenic, but from the development of nitrites. This formation of nitrites is especially apt to occur in the presence of putrefaction. Some of the diverticula retain bismuth for three weeks or more. Hence it would seem reasonable to administer half an ounce or ounce doses of bismuth oxychlorid or bismuth subcarbonate each week or so. Certainly a diverticulum filled with an antiseptic salt, such as a salt of bismuth, is less likely to permit mischievous developments than diverticula filled with germ-laden material.

Carcinoma of the colon (Figure 34) is relatively rare as a cause of chronic intestinal stasis, yet it is one of the findings in which the roentgen ray is likely to be of greatest service. Particularly is it true in the differential diagnosis of neoplastic tumors and the tumor of diverticulitis, and in other points of differential diagnosis between carcinoma and other lesions which produce similar mechanical results in the bowel.

Colonic stasis due to a kinking of the colon itself brought about by gas distention of redundant loops has been emphasized both by Pfahler and by the writer and should have careful consideration. This is especially true when sigmoidal loops are unusually long. Both the gas distention and the elongation of the sigmoid are the result of stasis.

Obstruction at the hepatic flexure is not common. Obstruction at the splenic flexure is very rare. Stasis in a prolapsed transverse colon is practically never encountered. The writer does not seriously consider ptosis of the transverse colon as a cause of constipation, although it is recognized that it may be an associated condition. On the whole, the writer is forced to conclude that in the majority of cases of constipation, the cause is located below the crest of the left ilium and if not primarily due to a spasticity, at least exhibits spasticity as an important factor.

We formerly considered many cases of constipation as due to atony of the bowel muscle. We now have learned that in the majority of cases, the bowel is hypertonic. We deal with a hyperkinetic or later a dyskinetic constipation, as Schwarz terms it. The stasis perhaps originally occurs in the pelvic colon, and being allowed through neglect to persist there, gives rise to colitis, pericolonic subinfection with adhesions, and spasticity. Doubtless many other factors are active, but these three just named may be considered as the active mechanical causes of constipation. As a result, the point of origin of antiperistaltic waves moves distalward, and the sum total of the antiperistaltic influence is increased. The right half of the bowel becomes the seat of stasis. Chronic appendical and ileocecal valve changes supervene. Finally, the stasis extends to the terminal ileum, where its results are much more quickly felt by the organism.

The writer recognizes that in the foregoing pages he has not discussed nor illustrated what might ordinarily be expected from an "*x*-ray man." Perhaps more in order might have seemed a discussion of technic and a demonstration of numerous plates showing prolapsus, dilatations, kinks, etc. But roentgenology, to be of the greatest use in diagnostics, must not be separated from clinical medicine. The term "*x*-ray diagnosis" is a misnomer; we should refer to the "*x*-ray findings" and correlate them with the findings of other research methods. In this spirit, the speaker hopes he may have occupied your time to better purpose by this attempt to analyze the results of his observations on a large series of constipated individuals.

INTESTINAL STASIS—THE MEDICAL ASPECT.

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(Read before the Allegheny County Medical Society at its fiftieth anniversary, April 20, 1915.)

Before discussing the medical aspects of intestinal stasis I wish to express to the members of the Allegheny County Medical Society my deep appreciation of their invitation, and of the honor conferred on me by asking me to participate in the discussion of this subject.

The subject, the medical aspects of intestinal stasis, is replete with so many problems of extreme interest to the clinician, the pathologist, the bacteriologist, the chemist and even to the orthopedist and to the surgeon that it is difficult to decide upon the best way of approach. Shall we lay most stress upon the underlying anatomical basis; shall we discuss more especially the etiological factors and the very protean symptomatology; shall we direct our studies mostly to disturbances of motor function or to the very complex problems associated with the rôle played by the cleavage products of the proteid molecule, touching incidentally upon the question of the intestinal bacteriology in these conditions? Shall we, as many do, regard the major problem as one not of increased production but of increased absorption of toxins, and with this consider especially the influence of variations in the normal secretions as well as a consideration of the antitoxic organs and tissues, the body defenses against widespread toxemic manifestations? Shall we study the marked variations in the susceptibility of different individuals, and the vulnerability of different organs to different toxins; shall we try to interpret many of the more obscure phenomena as expressions of variations from the normal of those hormones or internal secretions whose rôle it is to preserve the normal tone of gastrointestinal musculature, and the effect of the products of disordered metabolism upon organs or tissues furnishing these bodies? Shall we discuss the best methods for reaching a correct diagnosis, and for furnishing us a complete picture of the underlying process from its anatomical, physiological, chemical and bacteriological aspect? Or shall we turn to the more practical question of appropriate treatment, dietetic, medicinal, physical, and even surgical, based on a broad conception of the condition and likely to be followed by a considerable measure of success?

Obviously no discussion of this subject would be complete if any of these topics were neglected, and yet each one is worthy of a paper covering the time allotted to me this evening. We will, therefore, endeavor to touch upon each of the medical phases of this most interesting of problems of necessity in rather a fragmentary manner, first clinging to earth in discussing the proven facts of the case, and then with your permission giving wing to Pegasus, and flying for a short time to the realms of theory in an attempt to visualize the complex and complicated factors involved in intestinal stasis.

By stasis we mean the result of atony of the intestines and abdominal muscles allowing the viscera to prolapse, with tendency to kinking of the bowels, and with the possibility of the contents staying far beyond normal limits at or above the involved area.

Poised as it were between two forces, the pushing force of the respiratory apparatus acting through the diaphragm, and the lifting force of the muscles of the abdominal wall and of the pelvic floor, and definitely fixed at but a few spots, and loosely at that, the gastrointestinal tract is singularly labile, singularly susceptible to change in position.

Practically speaking it is stasis in the terminal portion of the ileum, cecum and ascending colon that furnishes the major portion of the signs and symptoms presented. Our views as to the motor functions of the large bowel have been so changed by the radiographic and fluoroscopic studies of Holzknecht, Barclay, Judson, Hertz, and especially of Case that in the picture of intestinal stasis we must always keep in mind these newer conceptions—the movement of the fecal column *en masse,* the possibility of a functional sphincter above the cecum, and the possible variation of the terminal portion of the ileum from the remainder of this portion of the gut. We must realize that the large bowel is but one part of a closely linked complex organization supplied by sympathetic and vagus fibers, stimulation of the former diminishing, of the latter increasing the intestinal tone, although normally the movements are dependent to a great extent on the reflexes having their center in the nerve cells of Auerbach's plexus by mechanical and chemical stimuli, and thus obviously more marked with the vegetable foods. This interdependence and correlation of the whole gastrointestinal tract must never be forgotten; it is for this reason that food in the stomach tends to make the ileum empty its contents into the cecum, while there is definite evidence also of an ileopyloric reflex as well. In this connection, was it not Moynihan who said that the most frequent seat of gastric ulcer is in the right iliac fossa? Realizing thus that the whole gastrointestinal tract is linked up by a complex nervous system of its own, of course affected by the central nervous system, yet independently capable of automatically calling forth motor as well as secretory stimuli according to the nature of the ingesta, let us take up the question of the causes of stasis.

Broadly speaking any condition, which tends to lessen the tone of the abdominal musculature or of the muscles of the intestines themselves or, by pressure, kinking, constriction, or reflex irritation, tends to slow the passage of the intestinal contents, may lead to intestinal stasis. Thus we may meet with it after wasting diseases or diseases associated with high temperature and marked toxemia; it is peculiarly likely to occur in splanchnoptosis, a condition which, as we well know, is to be regarded as primarily congenital in the great majority of cases. We may have a congenital atony of musculature, or we may find it as an accompaniment of senile changes. Various conditions may bring it about by diminishing reflex stimulation, causing inhibition of intestinal movements, or by overstimulation, causing intestinal spasm. Tumors and swellings, either within or without the intestine, stricture due to ulcers, kinking due to adhesions or to change in the intraäbdominal pressure conditions, postoperative adhesions, all these may be the primary causes of fecal stasis and intestinal atony. There is an important chapter to be written by the surgeons on what can be done to prevent or lessen postoperative adhesions; is it a question of better after-care, with massage, change of posture, a stricter diet, etc., or are there deeper underlying conditions which make certain individuals peculiarly liable to adhesion formation? Are not some cases due to a deviation from the normal balance between vagal and sympathetic stimulation, one group leading to vagotony, the other to sympatheticotony? Is there a true intestinal hormone presiding over the motor function of the intestine, and are not some of the cases due to its diminution or absence? May not the lack of such a peristaltic hormone be the basic cause of the atonic thin-walled cecum and colon so often described by the surgeon in these cases of stasis, and may not some disturbance of internal secretion, possibly from the pancreas, be the cause of the dilated duodenum met with in cases of upper intestinal stasis, regarded by some as a gastromesenteric ileus, but extremely difficult to explain on this basis? Why is obstruction or stasis of greater severity the higher its location in the small intestine? Is it because the duodenum and, to a less extent, the jejunum and ileum are also excretory organs, among the excretions from which is to be found a poisonous ferment or toxin of the cholin group, as suggested by Stone and Bernheim?

Whatever be the cause, certain conditions are brought about, a stasis of fecal contents, generally associated with constipation, but sometimes with apparent diarrhea; the possibility of changes in the mucosa and musculature, of the formation of erosions and ulcerations, the development of a low grade of peritonitis, a more and more sluggish peristalsis, with longer and longer stay of the fecal column, an increased permeability of the intestinal wall to bacteria and to other substances, a loss of the sphincter action so necessary to fecal propulsion, the development of adhesions, deleterious influences on the local secretions or hormones, reflex disturbances in the chemical, sensory or motor spheres of other portions of the digestive tract or even outside the digestive apparatus; disturbances of the nervous mechanism by pressure, by traction, and possibly by the influence of toxins; change in the cultural conditions, with the possibility of the appearance of microörganisms not found in conditions of health, or of overgrowth of certain bacteria normally present in minimal amount, with diminution or disappearance of certain of the strains normally found.

Broadly speaking the symptoms referred to intestinal stasis may be divided into two main groups; first, local symptoms, pain, fecal tumor, distention of gut, increased resistance, constipation, occasionally alternating with diarrhea, and, second, symptoms referred to other portions of the body best explained on the basis of a toxemia, although some, from lack of evidence, prefer to regard these as reflex and not toxic manifestations. For ourselves we are unable to see a rational explanation except on the basis of toxemia.

These symptoms are so protean that their mere enumeration would take far too much time—depression, psychoneurosis, headache (very common and very intractable), fever, fatigue, neuralgia, insomnia, asthma, and emphysema, dyspnea, symptoms of myocardial change, nephritis and pyelitis, chlorosis and pernicious anemia, urticaria, pigmentation and other skin lesions, besides many and varied digestive symptoms. We reported in 1911 a number of cases of neuralgia and neuritis probably due to intestinal toxemia, and two years later von Noorden in his studies on neuritis concluded that neuritis was often due to a similar cause. Peculiarly interesting are the eye symptoms met with in a small group of cases, ranging from simple transitory dimness of vision and muscæ volitantes to severe attacks of choroiditis leading to permanent impairment of sight. We have recently studied a case of the latter associated with marked intestial stasis and toxic symptoms with a persistently alkaline stool from which we have isolated and are now studying culturally three distinct strains of proteolytic anaërobic bacteria.

Careful studies of the stool and quantitative estimation of the diastatic and tryptic ferments therein have made us feel that functional or even organic disturbances of the pancreas may be met in some of these cases, also suggested by the temporary glycosuria met with in certain of the acute toxic outbreaks. The skin lesions are peculiarly interesting because of the isolation by Eppinger from the stool in certain cases of autointoxication of a ptomain, which, even in great dilution, produced marked urticaria if applied locally.

Broadly speaking, therefore, we may divide our second group of symptoms into three subgroups: (1) Those with vague general symptoms, and often presenting the typical picture of a psychoneurosis; (2) those with symptoms in other portions of the gastrointestinal tract sometimes constant and presenting the picture of a gastric or intestinal dyspepsia, sometimes periodic and here often of a very violent nature, such as acute salivation, acute nausea and vomiting, and acute diarrhea; (3) where the symptoms are mainly localized in one organ as the eyes, the nerves, the skin, the thyroid, possibly due to lowered resistance, possibly to specificity of toxin.

In certain of these conditions we have without doubt the organic basis of various vague functional disturbances of digestion, or of conditions regarded as neurasthenia or psychasthenia, or those that fall into that large group of cases in which without definite complaint the patient is always below par. Such an organic digestive condition even if of very low grade may change a person of even normal nervous habitus into a neurasthenic if acting over a sufficiently long period of time, while, upon the susceptible nervous system so frequently met with in splanchnoptosis in which stasis is common, the effect will be greater and more permanent. Realizing that most of these phenomena can not be explained on morphological grounds, how best may they be interpreted? Shall we turn to von Haller's suggestion made in 1761 of autointoxication, suggested anew by Bouchard with his urotoxic coefficient, and now ably supported by many clinicians, who, however, study indican or ethereal sulphates as surer diagnostic signs? Is it due to increased production of toxin, or to increased absorption? May an immunity be brought about in time, and are the acute attacks to be regarded as anaphylactic in nature or a colossal vagotony? Is it mainly due to the breaking down of the antitoxic mechanism of the body, or can the symptoms be better explained as reflex phenomena?

The urotoxic experiments of Bouchard have been disproved, indican is no longer regarded as a safe criterion of intestinal decomposition, and yet of all the explanations, that based on the theory of autointoxication is the best solution of the symptom complex presented.

When we speak of toxic symptoms in these cases we are unquestionably treading on debatable ground, and yet, in the majority of high-grade displacements or fixations of the large intestine, symptoms are met with explicable only on this basis. Certainly the anlage is there, the displaced, kinked intestine, deficient in tone and propulsive power with the consequent stasis of fecal material, and yet constipation alone can not account for these toxic symptoms, for that condition is frequently of very high grade with no appreciable toxemia. What is the cause then of these toxic symptoms? Is it a toxin normally present but in excess? Or due to stasis have the liver and other portions of the protective mechanism become insufficient (possibly due to repeated mild anaphylactic reactions from proteid poisoning, as suggested by Longcope's recent work) and toxins normally destroyed by the liver allowed to get into the general circulation? Or is there a tendency in these cases for an overgrowth of certain forms of bacteria, notably those Gram-positive anaërobes associated with proteolysis? Or is the toxemia due to the products of certain ferments in excessive amount or perverted, or to intestinal excretions?

Whether these toxins are derivatives of the amino acids, and bear such a relationship as cadaverin to lysin or putrescin to arginin, we can not say, but it is very striking what slight changes in molecular constitution are necessary to convert the normal bases into products of great toxicity, and it is certainly possible that these changes may be brought about by the proteolytic bacteria found in the intestines.

In a broad sense perhaps we should include the poisons produced in histogenic autointoxication, the causative factors of gout and acidosis for example, but we will confine ourselves exclusively to the toxemia due to changes of a qualitative or quantitative nature in normal digestion. Vaughan and Wheeler showed that all proteins contained a poisonous group, but we know that, while gastric and intestinal digestion due to ferments split the proteid molecule only to the hexone bases of diamino acids and the monamino acids both of the aromatic series and of the fatty series, it is under and only under the influence of bacterial decomposition that the cleavage is carried much further, and we get fatty volatile acids, ptomains and leukomains, aromatic bodies, and various gases, such as sulphuretted hydrogen, as well. Of course, most of these toxins are eliminated normally by the stool, and the rest are neutralized by the antitoxic mechanism, the intestinal mucosa, the liver, thyroid, suprarenal and pituitary glands; but, with increased production, or increased absorption, or insufficiency of antitoxic organs, toxemia is possible, aided, of course, by disturbances of the secretions of stomach, pancreas, intestines and liver. Evidence from the domain of experimental pathology is not extensive because of the inherent difficulties, and much of the older work has had to be discarded because of just criticism, but the recent studies of the French physiologists on the influence of toxins on animals and the work of Eppinger in isolating two ptomains from the stool, one producing urticaria, the other typical asthma, is extremely suggestive. All the toxins isolated strongly stimulate the vagus, and Eppinger's definition of vagotony is practically identical with the usual conception of autointoxication, "a toxicosis of intestinal origin with insufficiency of the protective antitoxic mechanism."

Under normal conditions carbohydrate fermentation takes place in the small, nitrogen putrefaction in the large intestine; the former due in the main to aërobic bacteria, saccharolytes; the latter to anaërobes, usually Gram-positive, the proteolytes. In the normal colon we find large numbers of aërobes, such as many colon strains with a few facultative anaërobes, but in diseased conditions the strict anaërobes preponderate. In intestinal stasis, especially if associated with a rich proteid diet, we have conditions peculiarly favorable to the propagation of these anaërobes. We are now studying three such types, two bacilli and one coccus isolated from the stool, and subsequently from the appendix at operation, from a case showing marked toxic symptoms. Of course, no one will deny the real aid to digestion of the bacteria in breaking down both proteid and carbohydrate molecules; they may even be indispensable, but with altered cultural conditions they may become factors of great danger. Are these toxic anaërobes always present in minimal amount, or are they introduced from without and do they succeed in propagating under the abnormal intestinal conditions? Is it possible that anaërobes from the mouth, especially from pyorrheal pockets, and from tainted meat may play a part in this connection?

Thanks to the application of the roentgen rays to this field, our diagnosis of intestinal stasis is now comparatively simple, delayed motility, a persistent shadow beyond the maximum normal period, redundancy, prolapse, kinking being easily demonstrable by the radiograph and, according to our experience, quite as well by the fluoroscope. Even without this aid diagnosis as a rule is not difficult, the giving of charcoal, carmin or lycopodium to determine the length of time for the passage of food, careful palpation to reveal fecal tumors, distended cecum or colon, or increased resistance with slight pain on deep palpation. A smooth, enlarged liver without other cause may suggest the diagnosis, while a persistent slight increase of temperature or a moderate neutrophilic leukocytosis may aid us in unraveling cases of vague symptomatology. Even in cases of apparent diarrhea stasis and intoxication may be present. Certainly all cases of neurasthenia, the psychoneuroses, ill health without apparent cause, fatigue and inability to do efficient work should be investigated with this possibility in mind. Diagnostic mistakes may obviously be easily made, the pendulum has perhaps swung too far, and we are unquestionably too prone to ascribe to an intestinal toxemia symptom-complexes in reality due to other causes. Within the last year we have seen two cases presenting the typical picture of intestinal stasis with marked toxic features, headache, nausea, inertia, constipation, persistent erythema, treated for a number of months unsuccessfully on this basis, and yet clearing up as if by magic after a short course of thyroid extract, cases undoubtedly of hypothyroidism, or *formes frustes* of myxedema, possibly primarily due to an intestinal toxemia, but when seen utterly insusceptible to anything but specific thyroid treatment.

In attempting to diagnose and to dose the toxemia itself, examination of the urine and of the stool and functional hepatic tests have been largely employed. Few ascribe to indicanuria the important rôle given to it by Baar, but many depend upon the quantitative estimation in the urine of the various products of abnormal intestinal digestion, and to a less extent upon physical tests, such as cryoscopic index, the concentration, the refractive index, and the surface tension. Most of the former methods are based on the estimation of the ethereal sulphates as criteria of intestinal putrefaction. Thus the coëfficient of Baumann is the ratio of the sulpho-ethers to the total sulphates; of Amann of the sulpho-ethers to the total nitrogen; of Combe the number of milligrams of aromatic bodies per 100 grams of total nitrogen.

Numerous tests have been devised to determine the function of the liver, for upon its sufficiency or insufficiency largely depends the clinical picture presented by intestinal stasis. The estimation of lipase or fibrinogen in the serum, of phenoltetrachlorphthalein in the stool, of urobilin or urobilinogen in the urine, of the tolerance to galactose, levulose and the amino acids have all been employed. While most of these tests are based on the assumption that the toxins are derived from the proteid molecule we must not forget the toxicity of certain of the cleavage products met with in carbohydrate and fat metabolism, such as the unsaturated, fatty acids with their marked hemolytic properties in the case of the latter, and the relation of the former to certain types of migraine. In certain cases tests of pancreatic sufficiency or insufficiency as described by us a year ago should also be employed to determine the rôle of a secondary functional disturbance of this gland. When we realize the extreme complexity of the liver function, bound as it is closely with carbohydrate and loosely with protein metabolism, and when we realize the number of ferments necessary to bring about these processes, autolytic, polypeptid-splitting, disamide, arginase, nuclease, diastase, various oxydases, katalase, lipase and glycolytic, each probably specific in action, the difficulty in drawing conclusions from functional tests is evident.

The chemistry of the stool is so complex that only in the hands of the most expert chemist is its finer study possible. A persistently alkaline reaction, the odor of sulphuretted hydrogen, increase in proteid putrefaction as shown with the Schmidt tube, are all suggestive findings. The most stimulating work in this connection is that already referred to by Eppinger and Guttman, who isolated a definite ptomain and proved its toxic properties. But at the present writing the most important information to be derived from the stool is from careful bacterial studies, especially cultivation under anaërobic conditions.

No discussion of this subject would be complete without touching upon the main principles of treatment, which must have as its object the improvement of the motor, secretory and absorptive functions, the lessening of putrefaction and fermentation, the destruction or inhibition of deleterious bacteria, and the strengthening of the antitoxic and excretory organs. As regards prophylaxis the corrective exercises and other measures so well exemplified in the teaching of Dr. Goldthwait and Dr. Swaim in cases with the body form of splanchnoptosis, and the better after-care of surgical patients after abdominal operations are points worthy of especial mention.

The general principles of treatment are, first, to furnish a diet to stimulate peristalsis, to inhibit stasis, to lessen putrefaction, and to promote normal absorption, but at the same time to strengthen the body as a whole. The usual diet employed in this connection is one rich in farinaceous and vegetable substances with animal proteid reduced to a minimum, although eggs, milk, buttermilk and even simple meats are often allowed in varying amounts. Second, means to bring to their highest efficiency the digestive, secretory and antitoxic organs, and here rest is often fundamental and hydrotherapy helpful. Third, mechanical and physical measures to increase peristalsis, to improve tone, and to lessen kinking, displacements and atony. Fourth, attempts to lessen bacterial growth and to increase their elimination as well as of the toxins formed thereby, by catharsis or laxatives such as mineral oil, by antiseptics such as mercury in some form, by hepatic stimulants such as bile salts, by colonic irrigations with solutions of sodium chlorid, potassium permanganate or other substances and possibly by the introduction of oxygen. Fifth, introduction of bacteria antagonistic to the proteolytic anaërobes, and acidifying the culture medium. Various strains of lactic acid and colon bacilli have this property, and to a certain extent some yeasts, but the first are employed almost exclusively.

If persistence in these measures is devoid of success, if rest, diet, massage, posture, exercises, irrigation, medication and purgation do not yield results and the patient's condition warrants it, recourse must be had to surgery. This phase of the subject will be discussed at length by Dr. Clark from his peculiarly broad experience in this field, but from a considerable experience of our own the operations of appendicostomy and cecostomy with subsequent colonic irrigations have been fraught with far greater success than the more extensive and often mutilating operations often employed, while appendectomy alone is rarely successful, and is unquestionably based upon a fundamental misconception of the underlying conditions.

From the facts presented in the foregoing pages can we reconstruct the picture of intestinal stasis and the symptoms it produces? If we depend solely upon proven phenomena this is not possible; there would be too many gaps; the image would be blurred in many of its salient features. But if we believe with

Brieger that "our researches in the domain of physiological chemistry are as yet so incomplete, so insufficient that a negative result proves nothing at all," and with Eppinger that persistent research may lead to the isolation of many of the intestinal toxins, and feel that a clean-cut picture based on definite probabilities is better than the indistinct image which must come if only proven facts are accepted, then I think we are justified in trying to reconstruct and visualize the symptom-complex of intestinal stasis. The beginnings are those conditions leading to displacement or kinking or atony or spasm of some portion of the intestinal tract, perhaps congenital, perhaps due to pressure, or to inflammation, perhaps postoperative, perhaps due to disturbance of the internal secretions, perhaps due to the peculiarity of the patient and a deviation from the normal balance between vagal and sympathetic stimulation.

Whatever the cause the result is fundamentally the same, the longer retention of fecal material, an increased permeability of its wall to bacteria and toxins, the development of adhesions, of a low grade of peritonitis, which possibly, though not certainly, may be the cause of Jackson's veil and Lane's band, these in turn still further slowing peristaltic movement, the mechanical irritation of the hard scybalous masses and the possible development of erosion or ulceration, and thus furnishing another factor in increasing the permeability of the mucous membrane, the possible increase of the normal toxins, the possible formation of new toxins due to the new cultural conditions especially due to those proteolytic anaërobes capable of splitting the proteid molecule into low cleavage products of marked toxicity and the change in the osmotic conditions with its possible influence on absorption.

And yet this alone can not explain the general toxic symptoms; there must be in addition a breaking down of the natural protective mechanism of the body; in the first place the intestinal mucous membrane, in the second place the liver, in the third place certain of the glands of internal secretion, notably the thyroid, suprarenal body and pituitary gland. The enlargement of the liver met with in certain of these cases, the results of numerous experiments with Eck's fistula, the studies of different types of feeding after certain thyroid operations, all strongly support the view of the importance of this protective mechanism.

The bacteria or the toxins may produce, of course, temporary or permanent changes in the antitoxic apparatus, and a secondary cirrhosis of the liver, or a myxedema may develop and in its clinical manifestations markedly complicate the picture.

If these protective organs and tissues do not function properly then the toxins reach the general circulation from which they may be eliminated in the respired air, the urine, the stool or the sweat, although possibly producing functional disturbances or permanent lesions in their excretion. If this excretion is not sufficient, if the body as a whole or certain of the organs or tissues have a lowered resistance or an increased susceptibility we then have the picture of intestinal autointoxication, in the one case producing a picture of psychoneurasthenia, in another confining its symptomatology largely to the gastrointestinal tract and possibly affecting some portion far removed from the primary lesion, and in still another affecting one organ alone, either due to its lowered resistance, or its increased susceptibility, or possibly to a definite specificity of toxin, as suggested by Eppinger's work with beta-imidazolylethylamin and histamin, and affecting in one case a certain group of nerves, in another case the muscles, in a third the choroid of the eye, in another the skin.

If then our picture is a correct one a treatment based on these theories should be rewarded with success, a diet to promote peristalsis and lessen putrefaction, physical means to combat the abnormal position and faulty tone of the bowel, stimulation of antitoxic, secretory and excretory organs to their optimum efficiency, changing the character of the intestinal culture medium, overgrowth of the noxious bacteria by less harmful types, cleansing the intestine by laxatives, antiseptics and irrigations either by the rectum or through a new opening in the region of the cecum. If greater success has followed these methods (and this seems undeniable) than by measures based on other conceptions of the underlying process we are at least justified in retaining a theory which every day is being supported by new facts.

Our conception of disease is constantly changing, we realize more and more that functional disability is as real a test of abnormality as morphological change, and that in the production of symptoms function is more important than form, that lack of tone and its effect on secretion, absorption and the chemism of the bowel contents is more important than displacement or kinking or constriction, although probably largely dependent on this latter for its origin. Is it, after all, more irrational to try to explain the problems bound up with this subject on a theory based largely on the conception that the underlying process is chemical and is associated with variations from the normal in secretion, absorption and bacterial growth than our attempts to explain the etiology of nephritis, in which we now know alcohol plays but a slight rôle, or pernicious anemia, or diabetes, or arteriosclerosis, or certain of the arthritides along somewhat similar lines? That the poisons can not often be demonstrated is not so much a proof of their absence as of their extreme complexity and of the minimal amounts in which they must be present in blood, urine and stool. Certainly such considerations as these should make one think long before removing or permanently mutilating large portions of the digestive apparatus. We feel with Barclay that "the fact that certain wholesale removals are successful (and this undoubtedly is true in a small percentage of cases) is no proof that they were necessary, but rather that somewhere in this large mass lay the cause of trouble," and that "one is astonished not so much at the brilliance of the surgery displayed as at the tolerance of the human body."

The mechanical and surgical conceptions of intestinal stasis are quite insufficient to explain the symptom complex presented. Back of the mechanics of digestion lies a problem far more complicated, far more difficult to solve, the question of the deeper causes of change in intestinal tone, of the disturbance of the delicate balance normally maintained between vagal and sympathetic stimuli, the problem of congenital or acquired hypersensibility to certain stimuli, the question of the overproduction of certain toxic substances and their chemical nature, their physiological reactions and their possible specificity, the question of the factors involved in normal and abnormal absorption, and the physics of intestinal osmosis.

By, and only by, a realization of these underlying causes may we hope to reach the proper conception of intestinal stasis. With this proper conception of the questions involved, accepting gladly the facts proven, but not scorning help from the as yet not completely proven but nevertheless helpful theories, we may hope, and with a real feeling of success, for progress along a road bristling with complexities yet replete with opportunity, and showing every day some new blazed trail leading out into the light.

THE SURGICAL ASPECTS OF FECAL STASIS.

BY JOHN G. CLARK, M.D.,
Philadelphia.

(Read before the Allegheny County Medical Society at its fiftieth anniversary, April 20, 1915.)

The last five years have witnessed a very great awakening in the study of the sources of various toxic emanations within the human economy. In the enthusiasm of this era every bizarre symptom which can not be traced to a demonstrable physical lesion is likely sooner or later to be referred to as a toxic manifestation. Neurasthenia as a catch-all for obscure symptoms has lost its vogue and many of these individuals contented with this euphonious term have been set into a new mental turmoil by the impressive expression, toxemia. The tonsils, the antrum, the thyroids and suprarenal glands carry a considerable onus and every mucous membrane must be viewed with suspicion if the patient's ailments can not otherwise be explained. After all, this newer phase in medicine is but a duplicate of countless others which have in times past claimed the enthusiasm of our guild. From each a therapeutic structure of importance has been erected, but seldom indeed has the edifice proved to be the wonderful castle that the dreamer had forecasted. Only a few years ago, all of the digestive ills were to be remedied by anchoring movable kidneys. A hundred nephropexies were then done to five now, but those ninety-five failures furnished the data upon which we now base the cure of the five cases.

Even the much vaunted beneficial effects of gastroenterostomy have steadily been scaled down until now only the case in which there is an obstructed gastric outflow is submitted to this operation with any assurance of relief. Thus has the science of surgery been evolved, and in the same manner this question of fecal stasis is being elucidated. Within this very wide domain, however, the problems are so great, and the many disturbances in physiology in their corelationship to deviations in anatomy are so obscure as to convince us that thus far we have merely scratched the surface in getting at the real crux of the situation. Discussing this question as a surgeon, I almost stand in the position of holding a brief for the physician, for my surgical experience has confirmed my original statement so frequently reiterated that the cases of intestinal stasis primarily belong to the medical man.

The frequency of cures at his hands are much more easily enumerated than are the scores of failures, and I do not concede this field of endeavor to him because of the brilliancy of his therapeutic endeavors, but from the observation that it is only the occasional case which the surgeon will handle with greater success. Each division of medicine has made advances but neither is in a position to boast of any very great progressive movement.

In the operative treatment of certain well chosen cases of fecal stasis excellent results have been obtained, but no single measure has as yet proved so efficacious as to gain general approval. There is so much to be learned yet as to the exact rôle played by the small as well as the large intestine. It is not merely the correction of a defective drainage or sewerage system that confronts us but it is the much deeper and obscurer question of disturbed physiology. The elaborate chemistry of the gastrointestinal tract may primarily be at fault. It is for this reason that I look upon the adult case of fecal stasis, which dates back to earliest infancy as a well-nigh hopeless surgical problem. You can not change the distorted branches or trunk of the old tree and restore it to proper symmetry any more than you can work the same miracle upon the human body, which has for years suffered from vicious nutrition. The greater number of these cases fall within the latter class. To subject them to any form of suspension or short-circuiting operation or the excision of any portion of the large intestine is with rare exceptions fore-doomed to failure. Such surgery is builded upon shifting sands and must share the fate of any structure set upon such a base. Much of the surgical enthusiasm which has swept over this country has I believe been generated by false reasoning. The enthusiast, however, has demonstrated that certain surgical procedures, which were previously considered unwise because of supposed physiological objections, are possible, and in certain details our ideas concerning the function of the large intestine must be recast.

Thus it was believed that the individual without a colon must suffer from thirst because of the inability of the small intestine to take up sufficient water, but this is not so; that also the same individual must suffer from diarrhea, but this does not occur. It would appear, therefore, from actual observations that the colon may be removed without any great immediate disturbance in physiology but when it is removed do the toxic evils so often attributed to it always disappear? Were one to answer this question in the positive, an irrefutable surgical argument would be established, but such is not the case. The small and large gut are differentiated in very early fetal life into organs of radically different structure to meet specialized functional demands and the small intestine does not kindly take over the vicarious function of a food reservoir. In no set of organs within the body is there a more noteworthy adaptation of structure than here. The length of the gut, thickness of the mucosa and capacity of the large and small intestines vary as widely as do types of mammalia, for each species selects its particular food from every imaginable vegetable and animal source. The intestinal tube, in each species, and even in each individual type, is constructed, therefore, to meet even slight varying conditions. It is often said that we can not improve upon Nature, and the egotism of man, therefore is abounding when he throws aside as valueless any organ within the body. If, therefore, we hope to cure these conditions we start upon a false hypothesis when we assume that a dislocated or distorted organ is valueless.

Wholesale surgery based upon this theory is certainly doomed to failure. As a working principle, therefore, for the consideration of the treatment of fecal stasis, we must accept as a fact that the colon has a very important function and that it can neither be removed nor the small intestine short-circuited into it unless there are obstructive points which can be overcome in no other way. The hope for therapeutic success, therefore, lies in the direction of correcting these functions in infancy and early childhood by developmental supervision and hygienic means rather than by surgical intervention.

The clinical picture of the adult patient suffering from fecal intoxication has been well depicted by many writers. The essentially congenital cases, with pronounced bodily habitus, rarely obtain relief from surgical treatment if adult age has been reached. It can scarcely be expected that the lifting up or even the excision or anastomosis of offending organs can effect so complete a metabolic revolution in a patient of adult age as to result in even a moderate state of well-being after years of distorted growth. Briefly stated, therefore, I believe that persons the subjects of defects, which have actively retarded their growth, physically, nervously, and even mentally, until adult age has been reached, can be neither cured nor radically relieved by any surgical measure, and that the less often such measures are invoked in this class of cases the more likely are we to succeed in a second type in which benefit may possibly be accomplished.

It becomes increasingly evident that the cases that may be benefited by surgical interferences are those that have evidenced varying degrees of constipation from birth, but without serious default in general development, and who later, as the result of accidents, the stress of childbearing or an ever increasing constipation, finally reach a stage of partial obstruction.

Encouraging possibilities in the operative treatment of properly selected cases are evident from the published reports of men who have approached this problem from different standpoints. These various reports have contained sufficient evidence to at least warrant one in trying some of these operative measures in the most obstinate cases of fecal stasis. Lane, who has proposed the most radical of all, has asserted that the true basis of the condition is the noxious influence of stagnating fecal matter, which promotes bacterial activity and increases the absorption of the toxic products generated in the colon of the constipated individual. In a large series of cases, he has excised the colon, and in many others he has performed ileosigmoidostomy, believing that thus he has removed the very source of the trouble.

Everyone who suggests a new operation or who propounds a novel theory is likely to be carried far afield in his enthusiasm. Even should we grant that this may be the case, the evidence nevertheless indicates that there may be a considerable element of worth in Lane's suggestion. We have removed the colon in eleven cases and we can by no means share the optimistic theories of Lane and his followers. For years, we have maintained that when the physician abandons one of these cases as hopeless the surgeon may legitimately step in and offer possible relief in an occasional case, provided obstructive symptoms are evident. As we view these cases, the same rule applies to intestinal stasis as to cases of movable or floating kidney—no obstructive symptoms, no operation.

I have performed the hammock operation or suspension of the transverse colon in a considerable series of cases with satisfactory results in almost fifty per cent.; in others partial relief was secured, and in a definite percentage no relief, or even an exaggeration of previous symptoms followed; in one instance, death ensued from acute dilatation of the stomach. From this it will be seen that the operation is by no means a cure-all, but that the most satisfactory results are obtained in those cases in which the transverse colon is weighted with fecal matter, but is not so redundant or so dilated as to interfere with its proper return to the upper abdomen. If the colon is greatly redundant or markedly dilated, this operation is not effective, and in my opinion, should not be performed.

In two cases, in which I attempted to deflect the fecal current by making a lateral anastomosis between the cecum and the dependent transverse colon, or between the latter and the sigmoid, the effort was not successful, the symptoms being in no way alleviated. Here, as in a gastroenterostomy, an artificial opening made between two hollow viscera will not remain patulous or effectively deflect the intestinal current if the regular channel is not closed. Eastman and others have suggested that the dependent cecum be anastomosed with the sigmoid flexure. This will not establish a satisfactory function, in fact, it will not work at all. In one case we performed this operation before Eastman made his suggestion, and thinking to make it most effective we blocked the ascending colon at the hepatic flexure. The patient was no better, in fact was worse and ultimately we were forced to remove the colon down to the sigmoid flexure and the ileum was short-circuited at this point. Then and then only was the obstructive constipation and exaggerated tympanites overcome.

In the eleven colectomy cases the primary basis for the operation has been a definite obstructive constipation. A constipation of such severe grade as to require, day in and day out, excessive purgatives and drastic enemata. In such cases, a careful radiographic and fluoroscopic examination will materially assist in the diagnosis. Great discredit has been cast upon the value of the *x*-ray in the study of these cases because the most absurd and dangerous conclusions have been reached in cases of vague symptoms, because these magic rays have seemed to point the way for an overzealous surgeon. I know of no more dangerous professional association than a poor roentgenoscopist and a scalpel driven enthusiast.

Of our eleven cases of colectomy which have been followed with great care, six were most satisfactorily relieved, the remaining five have not fared so well. One is dead of an intestinal obstruction which occurred six months subsequent to the operation, after the patient made a most satisfactory gain in every way. At least three of the others are no better, possibly are worse, because they are now battling against the evils of an enlarging small intestine and a toxic state from a reflux from the rectum through the anastomotic opening.

When these cases reach this stage nothing further can be done for them. Our six successful cases, however, have been so very satisfactory as to make us feel that in the conservatively selected cases the operation may be advised.

One of the serious defects in the short-circuiting operation of the small intestine is the danger of an antiperistaltic impaction of the ascending and transverse colons with inspissated fecal matter which inevitably requires the removal of the colon in about one-third of these cases. On the other hand the removal of the colon carries with it certain serious anatomical hazards. First, the omentum is removed, and the post-operative risks are enormously increased through the formation of adhesions causing a partial or complete intestinal obstruction. In this direction the patient is deprived of this blanket which serves so admirably in shielding the small intestine from adhesions to the anterior abdominal wall and from adhesions between individual coils of intestine. A further and very serious objection is the tendency for the ileum to become dilated and gradually to lose its functional value. At first, I attributed this to a defective anastomosis with possibly a too small intestinal aperture. The criticism, however, is not well founded for in one or two instances where I have had an opportunity to see the subsequent results, intestinal adhesions have caused the trouble.

In an excellent review of the subject Moynihan unhesitatingly condemns the exaggerated claims of Lane, nevertheless, calls attention to the value of surgery in some of these cases in the same sense of conservatism which has guided us in our work. He also sees the same objection which we have experienced and advises a middle-of-the-road policy; *viz.*, he neither excises the entire colon nor short-circuits the small intestine into the rectum, but advocates the removal of the cecum and right-hand third of the transverse colon and the anastomosis of the ileum into the middle third. This plan was first suggested by Friedrich, and, while it has not been employed generally, it appeals to me to be eminently sane, for in this way the omentum may be preserved, and the new anastomotic opening is placed in a more natural or physiological position because a progressive peristalsis passes from the middle portion of the transverse colon to the sigmoid without recurrent antiperistalsis. Logical deductions, therefore, point to this operation as one not flying so adversely into the face of anatomic and physiological laws.

The excellent papers presented here to-day by the physician, the roentgenoscopist, and the orthopedist show that in all these departments active investigations are being made. Each special therapeutist will sift out and in time classify those cases which he may hope to relieve, and of those which refuse to fall through this differential screen, the surgeon will gather a certain number, and these will respond brilliantly to his intervention. As yet there are no clearly marked territories in this medical domain. We are, however, convinced that injudicious surgery in these cases in general, will carry with it grave danger, for a patient not improved will inevitably be made worse. When the colon has been removed there is little or no hope to remedy matters if the sequel of the operation is bad. As the result of our experience we have gained much knowledge as to the likely trend of this subject. Our forecast from the basis of our experience is that in a limited field excellent results will be obtained in cases of obstructive intestinal stasis, beyond this point we will not likely progress. The zeal of the surgical enthusiast should be restrained by the motto, ''make haste slowly.''

THE ORTHOPEDIC ASPECTS OF CHRONIC INTESTINAL STASIS.

BY LORING T. SWAIM, M.D.,
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(Read before the Allegheny County Medical Society at its fiftieth anniversary, April 20, 1915.)

Chronic intestinal stasis and imperfect physiology of the viscera are intimately associated with many orthopedic difficulties.

Imperfect poise and incorrect standing attitudes are among the foremost causes of digestive disturbances. The orthopedist is constantly endeavoring to relieve the unnecessary strains to the feet, knees, sacroiliac joint, shoulders, and low back by correcting of posture and rebalancing of the body. By reason of this, he has frequent opportunity to observe the effects of postures on the functioning of the abdominal viscera. Constipation is almost invariably found in those whose poise and posture is faulty and is common in the congenital and acquired visceroptotic patient. In studying the etiology, it is well to consider man as an animal. There are two distinct human types based on their structural resemblance to the classified lower animals, the herbivorous and the carnivorous. Man is usually a mixture of the two, although people are often seen who show predominant characteristics of the extreme forms.

Under contrasting names they have been described by Treves and Bean, and later by Dr. John Bryant. They have been called the ''broad backs,'' or herbivorous, and the ''narrow backs,'' or carnivorous. The pure herbivorous man has a broad back, is heavily muscled and stocky in build, with massive bony framework. The chief distinctions, however, are to be found in the spine and hollow viscera. The lumbar vertebra are large, heavy and oval, with club-shaped transverse processes and the pelvis is broad. This spine is normal in the herbivorous animal, but the incorrect posture in man's erect attitude makes him subject to various lumbosacral derangements. The stomach is large, well attached and usually high. The small intestines are long, from nineteen to twenty-two feet. The large intestines are of moderate length and firmly held in the textbook position. The high attachment and the long intestine differentiate the two groups.

The carnivorous type is tall and slender or short and thin, with a rounded back, long muscles, narrow hips and light bones. The most marked characteristics of this group are also found in the spine and viscera. The lumbar vertebra are light and rounded, with long slender transverse processes and the pelvis is narrow and usually tilted. Because of this the carnivorous man is most susceptible to sacroiliac strain. The long tubular stomach is loosely attached, the greater and lesser curvature usually being below the umbilicus when standing. Comparatively short are the small intestines, averaging eleven to fifteen feet. The large intestines are loosely adherent and low in the pelvis, the cecum and ascending colon often having a distinct mesentery. The transverse colon in the erect attitude is often very close to the symphysis.

These radically different types are less frequently found than the intermediate or mixture of the two. Radiograms of the lumbar spine demonstrate this, especially the fifth lumbar, where many variations appear. Thus we are dealing not with a set type of intestines, but with various forms and combinations of these two distinct groups.

When man assumed the upright attitude, he found himself heir to many difficulties, not the least of which was constipation. This position would of course bear hardest upon the man with the loosely attached alimentary tract, the carnivorous visceroptotic type, but it also has its effect upon the herbivorous human being, for it is in this more heavily built group that we find the sagged stomach and colon or the acquired type of gastroptosis and enteroptosis.

The dictionary defines constipation as inactivity of the bowels. This inactivity may be due to the following causes: (1) Lack of muscular strength; (2) lack of secretions; (3) lack of innervation, (4) obstructions.

To consider them in detail:—

1. Weak muscles are the result of stretching by the contents of the bowels producing dilatation, or of constant pulling and sagging on the ligamentous attachments.

2. Lack of secretions is due to cellular inactivity and improper handling of food in any part of the alimentary tract.

3. In lack of innervation the nerve supply to the cells and muscles is damaged so that they fail to get the necessary impulse to act.

4. Obstructions are due to kinks, veils, bands, and lastly but often of much importance, a tight sphincter.

Any one of these defects is likely to occur in either acquired or congenital visceroptosis and is directly traceable to the abdominal drag. The sequence of events in the herbivorous man appears to be as follows: Being large and heavy he does not exercise enough, he becomes sluggish, he overeats, and from sedentary habits requires a bad posture with round shoulders and prominent abdomen. The incorrect attitude increases the abdominal pressure on all the viscera, the stomach and intestines suffering chiefly. In the carnivorous or congenital visceroptosis type, the slender, loose-jointed, long-muscled skeleton is flexible; the loosely adherent viscera drag; lack of nutrition and of muscular exercise produce abnormal curves in the spine and bad posture is the result. This again further crowds the machinery and a ''vicious circle'' is produced. The more the drag, the worse the posture, the less nutrition, the greater the downward displacement or the more the drag, etc.

For the purpose of this discussion, the inefficiency of the viscera is the direct outcome of imperfect poise and visceral drag. The pull comes on the attachments, and through these attachments comes the blood and nerve supply. A stretched stomach tugs on the branches of the celiac axis and pneumogastric nerves. The blood supply is diminished and the nerves are either over or under stimulated. This affects not only the gastric muscles but also the delicate cells of the mucosa. These abnormalities of secretion influence the pyloric sphincter. Thus food passing on to the intestines too rapidly or too slowly, is only partially prepared. In the duodenum the secretions may also vary, depending on the increased or diminished stimulus. A more serious difficulty is that described by Codman, the blocking of the duodenum by the superior mesenteric artery and vein when these are drawn tight across it by the downward pull of the small intestines; likewise, the greater the displacement of the small intestines, the poorer their blood and nerve supply which comes through the mesenteric attachments supporting them. Food here is not properly absorbed or digested and when it reaches the crowded cecum low down in the right pelvic fossa, it is in no condition to be passed on normally.

The large bowel also suffers from muscular weakness and abnormal secretions for the same reasons that the upper tract has failed. Another important hindrance to free passage is the sharp hepatic and splenic flexures. In a large majority of the cases of congenital ptosis, the ascending colon never leaves the pelvic fossa, being crowded down upon the cecum, and cecal stasis is almost sure to follow. This occurs more often when the standing posture is incorrect as the liver and right kidney give the ascending colon no room to rise. The transverse colon usually descends close to the cecum and crosses the abdomen just above the symphysis, thus making a sharp hepatic flexure. From here it rises almost perpendicularly to a high splenic flexure. It is this rise which stretches the muscles and together with the sharp splenic angle, which is a difficult turn for the feces, produces the colonic stasis so commonly found in ptosis.

A still more serious outcome of drag and pressure is its effect on the sympathetic nervous system, particularly in the emaciated congenital visceroptotic. This gives rise to various nervous symptoms and ductless gland disturbances.

Crile has demonstrated the result of cutting and stimulating the suprarenal nerve. Pressure on this nerve or drag upon it might very well derange its functions, and so impair the whole group which has been proved to be interdependent. That these glands act upon metabolism and catabolism, secretions and excretions, digestion and normal functions, has been conclusively proved. How much the physiology of the ductless glands is influenced by visceral drag can not as yet be determined, but clinical evidence seems to justify the assumption that they are closely related. In brief it would seem that intestinal stasis and some of its causes are the result of visceroptosis. The train of symptoms from visceroptosis is, as a rule, not apparent until incorrect posture occurs.

Treatment. The primary object of orthopedic treatment of intestinal stasis is correction of posture. Since imperfect posture interferes not only with the hollow viscera but with the other organs as well (the heart, lungs, kidneys, liver, pancreas and spleen), we must correct the posture in order to allow the whole body to functionate as normally as possible.

In perfect poise these organs are supported by the basket-like frame of the ribs and the retroperitoneal muscles and fat. In this position the viscera receive their necessary blood supply undiminished, they are properly innervated by the nerves, and not being pressed upon, their activities are neither decreased nor accelerated unduly. The nutrition is normal, and natural functioning of the muscles and secreting cells produces good digestion and elimination of waste products. The maximum of efficiency is attained.

This correct poise or posture is obtained by the use of supports or braces of various types. There is an interesting distinction between a patients' wearing an abdominal belt and his needing a support or brace. The belt holds up the viscera but it does not seem to affect the posture, and when the patient discards it he is no better poised than before. The purpose of the brace is to correct the stoop shoulders, flatten the exaggerated lumbar curves, and balance the body correctly. With this end in view a spring back brace is used, or an A. and P. belt which not only supports the abdomen but remodels the body. Corsets or leather jackets are extremely helpful in ultimate correction. When a patient is to wear a brace or a support, the perfect poise and the correct posture are carefully explained to him, and this ideal is kept constantly in mind.

The first requisite of a support is that it gives rest to overworked sets of muscles. Postural corrections demand this muscular rest, it is quite as imperative as remodeling the bony frame.

Another essential in the orthopedic treatment of intestinal stasis is to secure rest for the weakened digestive organs. At times this can be accomplished only by long recumbency. The corrective processes can easily be carried on at the same time. It consists in the frequent and regular assumption of various positions in bed.

The hyperextended position, with a pillow under the shoulders expands both the lower costosternal angle and the chest. It raises the diaphragm and corrects round shoulders. To be most effective this attitude should be taken directly after meals, since it assists the stomach to empty and gives a normal nerve and blood supply during digestion. Next the patient hangs face downward over the edge of the bed, hips in bed, head and shoulders on the floor. This "hanging prone" posture allows all the viscera to fall forward and reverse their usual position. All downward drag on the attachments is periodically removed by this simple means. If it is desirable to keep the viscera up for a longer time, the patient is lifted into bed to be on his face for half an hour. In extreme cases it is advisable to raise the foot of the bed.

The postural routine is also prescribed for ambulatory cases, the difference being that they wear some form of support when sitting or standing. The leather jacket is helpful where a case demands a night support, as it keeps the viscera in place and relieves sagging and strain while the patient is relaxed in sleep. Many restless uneasy sleepers are more comfortable with such a jacket than without it.

This corrective treatment is continued indefinitely, until the costal angle has changed from an acute to a right angle, until the shoulders are flat and the extreme curves of the back are decreased; in short, until the desired standing attitude is a reality. Then the braces are gradually removed and physical culture is commenced. The aim of these carefully chosen exercises is to strenghten the muscles so that the correct posture can be kept without effort. The patient begins with simple stretching exercises, gradually progressing to actual muscular development. The most important muscles are those of the abdomen, and the spine, both interior and exterior.

By constant practice the recti and oblique muscles are developed until they can support the viscera in the remodeled abdominal cavity under comparatively normal conditions. Daily practice teaches the spinal muscles and the psoas and iliacs to correct the tilted pelvis, and to hold the spinal column erect. During this period of rest and readjustment, the viscera gradually respond to better and more normal conditions, the nutrition improves, fat tissue is formed about the kidneys, in the mesentery and over the sympathetic ganglia. Displacements are much less apt to occur. With better nutrition the equilibrium of the nervous system is restored. The muscle tone of the stomach and intestines returns and peristalsis is vastly more active. Diminished or excessive secretions become normal, and with the greater capacity for physical exercise, cathartics and tonics are gradually discarded to be replaced by suitable diet.

In the orthopedic treatment as just outlined, medical care is indispensable until the necessary physical changes are accomplished. Surgery is sometimes vital when it is impossible to achieve the desired innovation because of bands and adhesions. When these are removed the treatment proceeds as in nonoperative cases.

The following is a typical history illustrating the results of orthopedic treatment of intestinal stasis.

For thirty years a woman had been struggling with chronic constipation. She was a bent over, frail emaciated little woman and although she never had any serious illness, she had always lacked the strength to meet the ordinary demands of home life and society. She complained of constant fatigue and debility, and always used a cathartic. Radiograms showed the congenital type of visceroptosis. Clinical examination revealed no organic diseases. After changing her markedly incorrect posture by recumbency, she was fitted with a supporting brace. During this period she gradually and steadily gained in weight (twenty pounds in all), but still had resource to cathartics. The following year, her strength having increased in proportion to her weight, she began housekeeping and was capable of doing much more than ever before. At the end of twelve months she was using cathartics only occasionally and in sixteen months she had discarded them altogether. She leads a normal existence, resting after meals when possible. Her only form of support is a well-fitting corset which assists her to keep her erect attitude. She takes daily exercises.

The orthopedic treatment of intestinal stasis is, then, directed towards producing normal physiology and functioning in the visceral organs through correction of posture and relief of muscular and bony strain.

Accomplish this, and not only does the stasis improve, but the whole bodily mechanism is working with greater efficiency and less friction. The correction of posture so changes the shape of the body that the normal relation of parts is secured.

DISCUSSION.

ON PAPERS OF DRS. CASE, BROWN, CLARK AND SWAIM.

Dr. J. Hartley Anderson, Pittsburgh: The subject of ptosis from a surgical point of view is intensely interesting and of the greatest importance. I wish to thank the gentlemen who came as our guests for their excellent exposition of intestinal stasis. I have selected for my part in this discussion one phase of the question in which I have had considerable experience from June, 1911, to June, 1914, *i. e.*, the relation of ptosis, intestinal stasis to appendicitis.

Cases of appendicitis come as regards past history under five well-defined groups. The first three groups (sixty-six cases) include those cases with long-standing history of dyspepsia, constipation, pain in right iliac fossa, general symptoms in varying degrees of stasis intoxication: groups four and five (twenty-five cases) of the acute or subacute suppurative appendicitis, of the septicemic type of infection, without dyspepsia or marked intestinal or general symptoms of ptosis.

The first three groups suggest congestion and insufficient tone, predisposing to a chronic inflammation. The first group includes cases of visceroptosis with multiple operations, definitely planned after *x*-ray and other tests. All patients with ptosis of the cecum were found to have chronic proliferative appendicitis (one hundred per cent.). Removal of the appendix was not the greatest necessity in these cases, but subsidiary, although symptoms of appendicitis were present. In the second group clinical diagnosis, without *x*-ray examination, was of chronic appendicitis, as the cause of dyspepsia and intestinal stasis. These were operated upon for appendicitis alone. These cases may require subsequent operations for other intestinal lesions. The lesion found in these cases of appendicitis was chronic proliferative appendicitis with dilated atonic cecum. The third group includes cases of long-standing, or recurrent minor attacks of tenderness in right iliac region, followed by acute suppurative exacerbation, making operation necessary; hence, the forty-two cases in the second and third groups may have a recurrence of symptoms of intestinal stasis demanding other operations.

The fourth and fifth groups include those cases which have not apparently any ptosis or intestinal stasis background. The fourth group includes cases of acute suppurative appendicitis, beginning with slight symptoms of pains without especially marked symptoms of dyspepsia or constipation, gradually culminating in a few weeks in an acute crisis. A progressive or larval type of infection occurring mostly in patients under the age of twenty. The fifth group includes cases of acute appendicitis in the first attack or the septicemic variety. These latter groups are shown for the purpose of comparing the relative frequency of the acute appendicitis, with the unknown anatomical defects, to the chronic variety which have a known anatomical defect.

CHRONIC APPENDICITIS.

1. X-ray diagnosis; multiple visceroptosis; operations,	34	(51.5%)
2. Ptosis, chief symptoms appendicitis,	24	(36.3%)
3. Ptosis, chronic appendicitis with acute exacerbation,	8	(12.1%)
	66	(100%)

ACUTE APPENDICITIS.

4. Without ptosis history progressive larval type,	16
5. Acute appendicitis. First attack without ptosis. Few days' duration,	9
	25

If on the other hand we compare the relation of ptosis to acute suppurative appendicitis, groups 3, 4 and 5, we find that in thirty-three cases eight, or twenty-four per cent., had a previous history of stasis.

Therefore in cases with a clinical history of chronic appendicitis, we have in at least fifty per cent. of cases associate pathological conditions which may be surgical, and require investigation before operating for appendicitis. Some of these conditions cause as much suffering, discomfort and danger as chronic appendicitis. Patients having had an operation for appendicitis alone and having recurrence of abdominal symptoms, should be reinvestigated in a thorough manner for anatomical and functional defects and reoperated on by some one competent to understand the limits of surgery. Many methods of technic have a vogue and become obsolete in a few months. It is for the physician to learn that one operation does not cure these cases unless, at that operation, all elements in the pathology of the case are satisfied.

Dr. J. W. Boyce, Pittsburgh: Dr. Litchfield has hinted as pointedly as politeness would permit that local talent would do well to limit itself to a report of actual observations of fact. Yet we have, here, in each of four different aspects of our subject, the master word from one whom we look on as ultimate authority. It ill becomes any of us to urge our own limited experience, whether it happens to accord with or to differ from what has been said. In particular, I do not think any Pittsburgher will have the impudence to relate his own experience in fluoroscopy in the presence of Dr. Case, the only American, so far as I know, whose work would be considered competent by European standards.

If I wished to sum up my own work with the fluoroscope in intestinal stasis, I could do so by saying that it has taught me only a very small part of what Dr. Case has given us all this afternoon. Yet, much as I appreciate the educative value of Dr. Case's paper, I could wish that he had spent all his time in relating the monumental work that he and Dr. Kellogg have done in regard to incompetence of the ileocecal valve, to my mind the most important unsettled question in the whole subject of intestinal stasis. Perhaps it was tact that lead him to slip over this subject gently in Pittsburgh. It is very humiliating to me that, though for six years I have been urging the value of fluoroscopy on the profession, there is yet not one of our fifteen hospitals that has the organization, in fact only one has the mere mechanical equipment, to repeat and confirm or disprove Dr. Case's work.

Each of the speakers has adverted to the fact that stasis is only one, and probably the least important, of the factors of intestinal toxemia. We will inevitably overvalue this factor merely because it is the single one that we can definitely and accurately measure. To my mind, the greatest harm that Arbuthnot Lane has done to the progress of clinical medicine is that he has still further focused our attention on this already overregarded point, and not merely in the fact that he has lead us to inflict one more mutilating operation on women who have already surrendered one after another interesting but dispensable organ to persuasive surgeons. I have learned by personal experience that an abdominal operation, in the hands of a master of modern surgery, in an up-to-date hospital, with a nurse that knows her business, is an interesting and, on the whole, not unpleasant experience. I admit that it has a tinge of danger, but so has big-game shooting, polo, or foot-ball. Whatever is true of the public in general, I hold that every physician should have his appendix removed. After engaging in this exciting sport, one is better able to appreciate the psyche of the lady who decides to return to the hospital for still another operation rather than go to work.

Dr. C. L. Bradford, Pittsburgh: Any discussion of the subject of intestinal stasis must necessarily divide the condition into two groups, mechanical and functional. The mechanical type comprises all of those cases of acquired or congenital stasis where a definite obstruction exists, such as stricture, tumor within or without the intestinal canal, inflammatory narrowing, intussusceptions, volvulus, hernia, angulations, bands of adhesions, congenital defects, etc. This type may well be eliminated from discussion as the treatment is definite. The functional type is, however, a far more complex problem. First consider those cases of reflex contraction of the pylorus occurring in subacute or chronic appendicitis, gall-bladder irritation, kidney or ureteral calculus, and subacute inflammations involving the nerve supply to the intestinal tract or its associated excretory or secretory structures in which removal of the irritating lesion is known to cure the condition. Then consider that other great class of cases, colonic stasis, autointoxication, intestinal toxemia, etc. This condition is practically always associated with visceral ptosis, general muscular insufficiency, and an unstable nervous system, the definite symptomatology of which is associated with the colon, the definite changes in the colon being an antiperistalsis associated with a hypertension of the ascending colonic and sigmoidal loop and a dilatation of the cecum and incompetence of the ileocecal valve as a result of this hypertension and antiperistalsis. As you all know the emptying of the colonic contents is a result of a combined voluntary and involuntary effort, the involuntary effort bringing the fecal mass from the cecum to the anus, and the voluntary effort opening the anus and through the abdominal muscles and diaphragm completing its expulsion. Is it not logical to assume that when for any reason this voluntary effort is inhibited, an antiperistalsis occurs and the colonic content is returned to the transverse colon and cecum and that if this inhibition occurs frequently the condition of spasticity of the ascending loop is produced together with the cecal dilation, valve incompetence and autointoxication?

The problem of cure would then seem to be simply one of reëducation which may be accomplished in many ways, always bearing in mind that the patient has a general cellular fragility, and will continue to have until we learn the cause and cure of this developmental defect, and that colonic intoxication only accentuates this cellular defect.

Dr. James D. Heard, Pittsburgh: The Allegheny County Medical Society is to be congratulated that its semicentennial celebration came in 1915. Had this society been organized in 1863, or even in 1864, the question of intestinal stasis could not have been properly selected as the subject of our symposium to-day. In their selection of time for organization, as in other matters, "our founders builded better than they knew."

Dr. Clark has shown the confusion surrounding intestinal stasis previous to the present time. As has been said, we are just bringing order out of this confusion. Synthesis is beginning to give place to analysis, and the admirable demonstration of Dr. Case suffices to show us how definite knowledge is being collected through his efforts and those of his colleagues. Many gaps still exist and these must be filled in through the coöperation of the pathologist, the physiological chemist, the surgeon and the internist. Many errors of the past arose from overenthusiasm, but without this enthusiasm on the part of a few, it is difficult to stimulate the conservative research of the many.

Dr. Clark has stated that the responsibility of caring for most of the cases of intestinal stasis rests with the internist. We accept this responsibility, but we do so with humility. We realize that the disturbances of function resulting from this disorder are but imperfectly understood, and that the patients suffering from intestinal stasis are peculiarly difficult to handle. They will take pills, but they will not always follow a rational regime of bran, paraffin oil, selected foods and exercise. They are quite unwilling to give up the sedentary habits which must be regarded as causal factors in the condition from which they seek relief. The handling of these cases requires a patience known only to the psychiatrist. Whether these patients are to be treated in the home or in a hospital, it is essential that proper team work be secured. This is often difficult in the home, and strange as it may appear, may be quite as difficult in the institution. The modern hospital is still hypertrophied on the surgical side. The insistance upon a technic, which is recognized as essential in the operating room, is apt to be regarded as mere fussiness in the medical wards. There is a certain passive resistance on the part of hospital management, dietition and nursing staff, which is experienced in the highest degree only by the practitioner of internal medicine. Yet the responsibility for this condition of affairs rests with the internist himself; he must insist upon a proper technic; then and only then can he achieve results that he need not regard as unworthy.

Dr. George C. Johnston, Pittsburgh: I have never before heard a quartette of such eminent singers sing together in such exquisite harmony and with such lack of discord. Indeed, it sounds so well that I suspect it must have been rehearsed beforehand! Dr. Case, of course, is an old convert, and I was converted at the same time that he was. I know also what Dr. Clark thinks and believes, for I have heard him before. These other two gentlemen, however, have just lately hit the sawdust trail! After having heard this quartette sing, it is no use to discuss the subject, they are all in such absolute accord. I have a lot of things to say, some of which would agree and some would disagree, but not in five minutes. One thing which interests me greatly is Dr. Boyce's ignorance of what is going on in his own city.

DR. CLEMENT R. JONES, Pittsburgh: I do not believe that there is one in the house to-day who does not appreciate what has been done for us in the portrayal of the conditions on the screen as shown by Dr. Case; also the able manner in which the medical, surgical and orthopedic aspects of the subject have been presented. We all, I am sure, feel like voicing our applause and approval of what has been shown and said. Dr. Litchfield, in asking some of us not to discuss the papers, but to give some ideas which had come to us from personal experience, mapped out what we were really to say, and I have written down just what I thought I would say, and in most points I find myself in hearty accord with the gentlemen who have spoken. I have carried on my work with a small number of cases, but dealing with the subject with the light that was given us by Lane and other men.

When several years ago we began to consider this question of intestinal stasis I took special note of cases which seemed to be influenced or complicated by tardy evacuation of feces and after careful observation for a considerable time I came to the conclusion that symptoms attributed to this cause were not so much the result of the retention of fecal matter for a period longer than normal as they were the result of putrefaction of protein and other foods superinduced by disturbances of secretion of some of the digestive or ductless glands or possibly a vagotonia and the presence of an abnormal intestinal flora.

I believe that many of the cases, which show by *x*-ray examination the presence of ptosis and other abnormalities of the colon, have been misinterpreted. We do not know how long this ptosis may have been present or that it is not but an accidental discovery and not an etiological factor. I have seen a number of cases in which the diagnosis of intestinal stasis had been made and in which I found the explanation of the symptoms in disturbances of the digestive and ductless glands, which I satisfied myself, were caused by the intestinal condition being made favorable for the growth and development of saprophytic bacteria.

DR. OSKAR KLOTZ, Pittsburgh: I think that Dr. Johnston has struck the right note when he said that we have listened to a remarkably happy symposium in which four experts of different fields of medicine came to a complete agreement in their conclusions. This is the more remarkable because it is only a few years since the greatest confusion existed in the discussion of the problem of intestinal stasis. Interested as we were in the papers of each of the speakers, I found the suggestive ideas of Dr. Brown very significant. To the clinician the term intestinal stasis too often means a single process and too little attention has been given to segregating the groups of different causes thoroughly. The fact that the symptoms arising from intestinal stasis are not proportional to the amount of stasis but vary greatly with the individual is apt to lead to a misunderstanding of the organic processes present. And when we realize that evidence of intestinal stasis may be present without true organic change, we appreciate how differently the cases must be handled. If we can but arrive at the cause of the stasis in each case our subsequent course is an easy one.

I was furthermore interested in Dr. Brown's effort to analyze the symptoms arising with stasis. Aside from the manifestations of the mechanical stasis alone, he has shown that other symptoms may present themselves from one of two causes. On the one hand, abnormal products of decomposition due to pathological fermentation are absorbed and lead to much discomfort. The suggestion that certain definite types of bacteria are prone to invade the intestinal contents in stasis is not new as it has been repeatedly discussed by Herter, Metchnikoff and others. There has been, however, to my knowledge, no definite evidence of the nature of the absorbed substances and if the ptomain isolated by Dr. Brown and his assistants is the true deleterious substance absorbed from the bowel and giving rise to symptoms, we have made a very definite step in advance. On the other hand, a not unimportant factor in intestinal stasis is the abnormal invasion of bacteria from the intestine. Adami was among the first to suggest this invasion, but his early findings were not taken seriously by the majority of the investigators. His results have been, however, amply confirmed by Nichols, Abbott, Holman, Wolbach, and others. Although Adami was insistent that the organisms escaping from the bowel were usually of the colon type, it is now found that many other organisms may be such invaders and particularly the streptococcus. We were interested in a case of intestinal stasis where it was shown that, during the process of stasis, colon organisms could readily be isolated from the urine while they would disappear upon the relief of the stasis through cathartics.

Furthermore, our experimental work has shown the ease with which bacteria will, upon the slightest provocation, leave the intestinal canal and invade the system. Injuries to various parts of the body having a systemic influence not uncommonly lead to the so-called cryptogenic infections which are, I believe, of intestinal origin. Peritoneal injuries quite aside from the intestinal canal quickly become infected. How much easier this becomes in the presence of stasis can well be appreciated from the symposium to-day.

The fact that each of the speakers has thrown the onus of responsibility of these cases upon the internist points to the conservative attitude of the desire more thoroughly to study and diagnose intestinal stasis before offering a surgical operation to the patient for the relief of symptoms, arising only secondarily to a mechanical obstruction. By such study the majority of cases will be found unsuitable for operative relief.

Dr. J. A. Lichty, Pittsburgh: I am sure in the five minutes allotted me or in less time I could say all I know about this large subject. However, if I were to say all I *think* I know occasionally, especially just before such a symposium as this is consummated, I might require more than ten times as much time to tell it.

There are just two points in the discussion which I would like to emphasize: The first is the necessity of looking at this subject from all angles. The very fact that we have to bring four great men from different parts of the country to present this subject to us is evidence in itself that it is not a small subject and that there are many ways of looking at it. It always seems to me that the diagnosis of this condition is the most important point. When the diagnosis is established the line of procedure, so far as treatment is concerned, is very plain. An internist himself is not able to take into consideration all the points. He must have associated with him a roentgenologist, a bacteriologist, an orthopedist, possibly a neurologist, a nose and throat man, an eye man, as well as a surgeon, before the various conditions can be fully appreciated which might be associated with this condition or which might simulate its symptoms.

I have gone with the surgeon a number of times in operating upon these cases but nearly always with a suspicion that after all we do not have a true gastrointestinal stasis but have some pathology somewhere which might explain the symptoms; by this I mean chronic gastric and duodenal ulcer, gall-bladder and duct disease, chronic appendicitis, possibly pancreatic disease or some pathology in the pelvis; and it is remarkable how rarely we have found a pure case of gastrointestinal stasis unassociated with one or other of these complications.

I congratulate Dr. Clark that he has been able to report only thirteen cases. It has been my experience that the men who have reported most of the operations in these cases are the men who have done the least work in investigation. It has been my privilege to go with some of these men through their wards and see them in their operating rooms; and while I have received every courtesy from them I regret that I must state this observation.

The second point which I wish to make is in the nature of prophylaxis. While we can speak of this condition as hereditary I think in many cases it is acquired, and acquired through poor posture and bad hygiene which is established in early childhood. I was hoping Dr. Swaim would refer particularly to this in his paper. If our children and young men and women were taught to stand properly and carry themselves properly when they walk, and sit properly when sitting, and were taught that exercise is better than laziness, I am sure there would be fewer of these cases. We live too easy; every day I see children, who ought to be walking or running back and forth from school to have the proper exercise, being carried to school and home in closed automobiles.

In my hospital experience I find very few of these cases among the working people, especially among the foreign people and the foreign women in particular who are accustomed to hard manual labor. I am sure each physician could do a great deal in his own community and among his own families in the way of prophylaxis in these cases.

Dr. David Silver, Pittsburgh: We can not lay too great emphasis, it seems to me, on the fact that ptosis alone does not necessarily produce symptoms; other factors, acting to lower resistance, are required, and when these are eliminated the patient very often goes along again on his normal level. The human machine shows a wonderful power of compensation for defects in its mechanism; hence it is always wise to reserve judgment as to the importance of any defect until after the machine has been "tuned up."

As an orthopedic surgeon my work has been chiefly concerned with the question of proper mechanical treatment, which to be effective demands, as I have learned, a painstaking attention to details that to many may seem trivial and unimportant. Obviously such mechanical treatment is just as essential following operation, although often disregarded, as in nonoperative cases.

From personal experience I consider efficient mechanical treatment as consisting of three parts: (1) A consistent method of using support, (2) the persistent use of proper exercises, and (3) constant attention to posture.

The particular type of support does not seem to me of especial importance provided it be used in the proper manner. I am satisfied with a good straight-front corset to which is added a back support to maintain and teach the correct posture. The manner of applying the support seems to me the essential thing. No one would think of adjusting a truss to an unreduced hernia nor, if a cure be expected, of allowing the patient to remove the truss before lying down; yet many of us fail properly to impress upon our patients the importance of getting the abdominal organs up into position before adjusting the support and of so maintaining them constantly. The patient should be required first to assume the knee-chest or some similar position for several minutes before the corset is applied and not to remove it until again recumbent.

To depend upon support alone is as unscientific here as in flat foot, spinal curvature and other affections in which apparatus is temporarily required; exercises should be begun at once unless contraindicated by some complication. But since our object is to replace prolapsed organs and keep them constantly so replaced the early exercises should, in my opinion, be given entirely in the recumbent position. The object of exercise is not only to increase muscle strength but more particularly to improve muscle tone and so enable the patient eventually to substitute muscular for artificial support. Of especial importance is it, I feel, to teach the patient to maintain proper abdominal tension while breathing naturally, the ability to do which is practically always lost. In later treatment instruction in singing by a really competent teacher is a great aid in securing a proper balance between the abdominal and respiratory movements.

The importance of posture must be admitted by all who have given the subject careful attention, but we are apt to think of posture as applying only to the upright position and to forget that the sitting and even the lying positions are of importance also.

DR. T. G. SIMONTON, Pittsburgh: The chairman has asked us for personal experiences. The Wassermann reaction has enabled us to diagnose syphilis in cases not suspected, and statistics have shown that these patients have definite loss of weight. When treating cases of gastroenteroptosis with rest, position, and improving the body tone by forced feeding, our efforts may prove disappointing, if we lose trace of this fact, and do not institute antisyphilitic measures along with rest, position and forced feeding.

DR. EDWIN ZUGSMITH, Pittsburgh: I would define stasis as any delay of the contents of the bowel short of complete obstruction. I have been asked to speak only of my personal experience. This covers lesions high up with the duodenum as their seat lower down with the ileocecal region as their place of origin, and then down throughout the colon to the anus. My experience has dealt with functional and anatomic stasis. Functional stasis is properly descriptive of ordinary atonic constipation and of certain nervous states, particularly neurasthenia.

Anatomic stasis—for this there are manifold causes, cases due to involvement of the duodenum, dependent on ulcer, adhesions to the stomach, gall bladder, pancreas and colon; carcinoma of any of the surrounding parts, or of the duodenum itself have been frequently seen. My experience does not include cases of jejunal or upper ileal involvement, unless I should include cases of tuberculous peritonitis. In the ileocecal region, I have met with cases due to carcinoma, more frequently those due to old-fashioned perityphlitis or to Lane's kinks. I have not satisfied myself as to the influence of cecum mobile. As for the rest of the colon and sigmoid, I have seen cases due either to new growths, adhesions or invagination. Stasis low down in the rectum is frequent from pelvic growths, enlarged and displaced uteri, perineal tears, and very frequently to hypertrophy of the anal sphincter, to fissure, or to hemorrhoids. Enlarged prostate is also an etiological factor, and enteroptosis is a common cause.

The diagnosis of these conditions depends chiefly upon the examination, in which the x-ray plays a large part, and to a less degree upon the history. Histories are so often fallaciously offered, words so frequently misused that one is easily misled. Furthermore our interpretation of pain, occurring a couple of hours after meals, is so frequently faulty that it is well to reiterate that while ulcer may produce pain regularly two to three hours after meals and relieved by food, other conditions, particularly chronic appendicitis, produce identical pains, as my records show, and as has been proven by operation and x-ray examination of some of my patients. Gall-bladder disease does the same at times. A peculiar thing about the presence of adhesions is the intermittency of symptoms. Why patients with kinks and permanent adhesions go for long intervals without symptoms is something that I am not able to explain. The influence of position on pain is both interesting and important.

As to treatment, it is always medical and sometimes surgical. We must never lose sight of the value of rest in bed, of exercise, bathing, local applications, the fitting of mechanical devices, nor forget the prime importance of diet and of drugs.

DR. CASE, closing: In closing I wish to express my appreciation of our very attentive audience. I can see that there is a healthy, earnest interest in intestinal stasis, which augurs the accomplishment of real progress.

Dr. Boyce is evidently not acquainted with Dr. Johnston's work as well as I am. I know that a large share of the appreciation which has been expressed here this afternoon is due to the good which has been accomplished through Dr. Johnston's persistent hammering away at this subject during these many years.

I would like to emphasize the fact that the title of my paper relates to the "basic principles" underlying the study of intestinal stasis. I have tried to bring out some of the fundamental principles of the physiology and mechanics of the normal bowel activities which must be taken into consideration before we can draw any conclusions as to the pathological state. .

I was very much interested in hearing the other three papers of this symposium, and I was particularly gratified with Dr. Clark's conservative attitude on the surgery of the intestines. We, on the surgical staff of the Battle Creek Sanitarium, do not believe in surgery for the relief of chronic intestinal stasis except as a court of last resort. There are cases where radical surgery is necessary. When short-circuiting is indicated, it is, in our experience, most likely to include a resection of the cecum and ascending colon, with anastomosis of the terminal ileum to the transverse colon as near as possible to the resected end; in other words, imitating as near as possible the normal arrangement at the ileocolic junction. An artificial ileocolic valve is made by Kellogg's method, as published in *Surgery, Gynecology and Obstetrics*, November, 1913.

We do not consider ileocecal valve insufficiency an operative indication. Insufficiency of the ileocecal valve is an end result, secondary to other factors. True, it may later become part of a vicious circle and in its turn tend to increase the amount of intestinal stasis. Colonic stasis is not followed by anything like the serious results which follow ileal stasis and it seems to us that only when colonic stasis produces ileal stasis, through ileocecal valve incompetency, for instance, is it attended by serious signs of alimentary toxemia.

We have never operated to restore the competency of the ileocecal valve except in connection with some other operation necessitating abdominal section. We have, in operating for other cause, in patients whose symptoms indicated intestinal stasis, taken advantage of the opportunity of having the abdomen open, to repair the ileocecal valve, and, up to date, have done this in about one hundred and fifty cases. Dr. Kellogg's operation is very simple, performed within two or three minutes, by the application of two and sometimes three sutures. In our experience it has never resulted in obstruction. There have been no deaths and no obstructions which have been attributable to ileocecal valve operations. In examining the patient after operation, the ileocecal valve has been found competent in about ninety-five per cent. of the cases. Some of the patients have been examined as late as three years after operation and in the majority the valve has been found still competent.

There is no more reason for believing that the valve will remain competent after repair unless the causes which originally led to the incompetency are removed, than there is to hope that a retroverted uterus will stay up in position unless the causes which led to the retroversion have been attended to.

Unquestionably the ileocecal valve is found incompetent in a considerable number of individuals who present no signs of intestinal toxemia. I referred to this in the opening paragraphs of my paper. I do not admit that these individuals are free from intestinal stasis, or that they are normal individuals. It seems to me we must call them symptomless individuals,—not normal individuals. In other words, they do not suffer from toxemia because their defensive mechanism is intact, or at least stronger than those factors which tend to produce a toxemia. That this question of ileocecal valve incompetency has a great significance I am satisfied. But personally I want to keep in the attitude of a student of the question. The observations of a number of men will be invaluable in helping to decide as to the importance of the work we have done in this direction.

Dr. Clark referred to the work of J. Rilus Eastman, particularly to the operation of typhloproctostomy. I think the operation of joining the cecum to the sigmoid is entirely wrong. I have not had the opportunity to examine a large number of these patients, but in every one of the few I have examined, there has been a double procession —food traveling up the ascending colon the normal way and up the descending colon by retrograde peristalsis, the two columns tending to meet near the middle of the transverse colon.

It is true that those who perform this operation are right in their conclusion that the stasis occurs in the right half of the colon, but the obstruction is not at the hepatic flexure, nor in the transverse colon. It is in the sigmoid, and the stasis is therefore due to exaggerated antiperistaltic influence, as I have tried to show in my paper.

In regard to the prolapsed transverse colon, picture to yourself a case in which the transverse colon reaches to the pubes; there is the usual high hepatic flexure, with apparently a sharp angulation, and the higher splenic flexure, with apparently a sharp angulation. Nevertheless, I have many times seen, with the patient erect, a large bolus of food residue six or seven inches long, start in the ascending colon and traverse the prolapsed transverse colon and up around the high, apparently angulated splenic flexure into the descending colon, all of this without the slightest hindrance. It seems to me we must get away from the idea that prolapsus of the bowel is synonymous with intestinal stasis.

My paper is really a plea for a broader viewpoint. We should not study the appendix, nor the hepatic flexure, nor the transverse colon, nor any one segment of the bowel, but we must study the patient as a whole in order to find out what we must do in these cases.

TREATMENT OF WHOOPING COUGH.

Perrin and Remy (*Revue med. de l'Est*) report having used with good results a mixture of methyl salicylate and oil of eucalyptus:—

℞ Methylis salicylatis, ℥i (30 grams)
Olei eucalypti, ℥iii-v (90-150 grams)

Sometimes even a one in ten mixture was used. The mixture was spread in a thin layer on plates or saucers and allowed to volatilize in the patient's room, the vapors exerting both an antiseptic action in the bronchi and an antispasmodic effect. In warm weather the measure affords a simple method of continuous inhalatory treatment, requiring no source of heat or apparatus of any kind. Some patients respond better, however, to the direct use of a spray or saturation of the air with water vapor.

EVENING MEETING.

Nearly four hundred physicians and laymen assembled at Hotel Schenley for the Anniversary Banquet. Dr. George C. Johnston acted as toastmaster. A history of the society was given by Dr. E. B. Heckel, and appropriate remarks were made by Dr. William S. Foster, an ex-president of both the county and the state societies; by Dr. W. J. Holland, the director of the Carnegie Institute of Pittsburgh; Dr. S. B. McCormick, chancellor of the University of Pittsburgh; Enoch Rauh, councilman; Judge T. D. Carnahan; Bishop Courtlandt Whitehead; Dr. J. W. Boyce, an ex-president of the county society; D. G. Stewart, a prominent banker of the city, and others. The evening closed with a vaudeville entertainment.

THE HISTORY OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

BY EDWARD B. HECKEL, M.D.,
Pittsburgh.

Mr. Toastmaster, Fellow Members of the Allegheny County Medical Society and Guests: It gives me great pleasure upon this felicitous occasion to bid you welcome in the name of the Allegheny County Medical Society, which on this day and date has completed an honorable existence of fifty years which at once makes this occasion an epoch not only in medical history, but also in the history of this community.

In contemplating the history of this society it at once transports us to a time when this country was just emerging from a long and tedious strife, when the rainbow of promise had just shed its luster of iridescent hues over the horizon only to be followed by a lightning-like flash from a clear sky which threw this country into a state of sorrow never before known in its history, a time when the stars and stripes had been proudly unfurled to the breezes of this united land only to be lowered to half mast in humble recognition of the fate which had befallen our chief executive. It was in such times that a little band of men, impelled by high ideals and lofty motives, not for the betterment of themselves but for the great good of humanity, met and organized the Allegheny County Medical Society.

Medical societies the world over have always been and are the result of unselfish interests. The science of medicine knows no race, color nor religious creed; the science of medicine belongs to humanity. There are no secrets in medicine, what is new is freely given for humanity. Nowhere will you find any set of men who give up so much of their time for scientific meetings, for purely unselfish purposes as within the profession of medicine. In fact they are constantly doing that which ultimately tends to the annihilation of their own business, a condition which to the business man would seem ridiculous.

On Tuesday, April 20, 1865, nineteen physicians met and organized as the Allegheny County Medical Society. The recital of their names will, I am sure, awaken pleasant and reverent memories, especially among some of our honored lay guests to whom they were well known for their sterling worth, not only as physicians but as men. The minutes of that meeting show the names of Drs. A. H. Gross, D. W. Lewis, A. J. Davis, H. Neal, J. H. Gronard, M. R. Trevor, R. B. Mowry, Geo. M. Maclean, A. Fleming, Geo. L. McCook, N. McDonals, A. H. Achenbach, Thos. J. Gallaher, B. C. Jillson, S. N. Benham, H. T. Coffey, M. O. Jones, James King and Wm. F. Knox; of these, all have gone to their reward, save Dr. Wm. F. Knox of McKeesport, who still graces our profession and who shows his interest by frequent attendance at the regular meetings; it is to be regretted that he, the oldest living member, is not with us to-night. As an illustration of the esteem in which this society was held by the state society I need but mention the fact that the following year, namely in 1866, Dr. James King was honored by being made president of our state medical society.

The first officers were as follows: President, Dr. A. H. Gross; vice president, Dr. M. O. Jones; recording secretary, Dr. B. C. Jillson; assistant secretary, Dr. S. N. Benham; corresponding secretary, Dr. R. B. Mowry.

Already during the first few months of its existence this society busied itself with things pertaining to the public good, for we find that at the October, 1865, meeting, a committee was appointed to draw up a "Sanitary Report of

Allegheny County." At the July, 1866, meeting, a committee was appointed "To examine and report on the condition of the water in the city," and at the October, 1866, meeting, Dr. Gallaher "read a long, able and interesting report on Sewerage." A motion was made that this paper be published in the city papers, "which called forth an animated discussion"—"the motion was finally laid on the table," so you can see that at this early date the profession withheld itself from public press publicity, a condition, perhaps, to be regretted, as it is only through dignified publicity that the public can be instructed and informed. I might go on to mention many things recorded in the minutes of the early existence of this society if time permitted. I will add but one; at the November, 1885, meeting, just shortly after Dr. Koller's promulgation of cocain as a local anesthetic we find a record that the late Dr. J. C. Dunn as chairman of the Committee on Medical Intelligence" made some remarks on the abuse of cocain and read a letter from a medical friend in Peru, in which was depicted the terrible effects of the cocain habit. The writer of the letter said he regarded the cocain habit a thousand times more pernicious and dreadful than that of opium," and yet it took thirty years to produce the Harrison Act.

These few citations I think more than justify the statement I have frequently made that practically all the comforts which this community now enjoys for the improved sanitary conditions and all that which tends for the prolongation of human life, have found their initiative within the medical profession, and have been fostered by the Allegheny County Medical Society, and have been brought to a successful fruition by the leading spirits of this society.

Much has been added to the sum total of human knowledge by this society, even if there have not been many epoch making contributions. I need mention but one, the torsion of blood vessels for the arrest of hemorrhage, so wisely promulgated by the late Dr. James McCann and now used throughout the world.

If I would dare speak of the achievements of those of our members still with us I could startle you, at least our lay guests, with the wonders they have wrought, but I will leave that for the one who may take my place at the centennial celebration, to which I trust some of us present now, may then be permitted to listen with rapt attention.

From a humble beginning with only nineteen members in 1865 this society has grown to more than one thousand in 1915. The growth during the first twenty-five in fact I might say during the first thirty or forty years was rather slow, but since that time the society has grown by leaps and bounds, largely through the efforts of one who is highly esteemed by all of us, namely Dr. E. E. Wible who as chairman of the Committee on Membership has accomplished much.

The society has grown so that it ranks second in the State of Pennsylvania, second in the greatest state society in the Union, a state society which in importance as a medical society is second only to that greatest of all medical societies, the American Medical Association.

It is frequently said that everything in this world is a matter of finance, and reckoning upon this basis it is an easy matter to prove my assertions. For the benefit of our lay guests permit me to state that our state society meets once a year and that in connection therewith we have a commercial exhibit, made up of approved ethical exhibitions, and it is these exhibitors, who gladly pay for the privilege of exhibiting, who tell us that they place our state society meetings second in importance only to those of the great American Medical Association, and when I make these statements I do not belittle or put our state society meeting upon a commercial basis, not at all, for in reality it is quite a compliment, because it means that the character of the scientific meetings is such as to attract a large body of men.

This society has always occupied a position of high esteem and respect by the medical profession of this great commonwealth, evidenced by the fact that nine of the presidents of our state society have been chosen from this society, Dr. James King in 1866; Dr. A. M. Pollock in 1872; Dr. Robert B. Mowry in 1876; Dr. E. A. Wood in 1885; Dr. James B. Murdoch in 1888; Dr. William S. Foster in 1895; Dr. T. D. Davis in 1900; Dr. Adolph Koenig in 1904, and your humble servant in 1913. Vice presidents we have had fourteen; two have been recording secretaries, two assistant secretaries and six have been trustees. In the American Medical Association our members have been honored in various ways, several of our members have been chairman of their respective sections, and Allegheny County has always been represented in the House of Delegates.

In local affairs our society as a whole has always taken an unpardonable pride in doing everything possible to make this community a better one. Under the old city regime with a large city council we have had representation, and under the same regime some of our members have taken an active interest in our public schools, serving as school directors; and under the new regime we have two of our members serving this community as members of the city council.

The interest in local educational institutions began with the organization of this society, for it met during its early history in the old Western University of Pennsylvania building at Diamond and Ross Sts. The existence of the present School of Medicine of the now University of Pittsburgh is the result of the early sacrifices of a number of the members of this society.

This society has ever been ready to do its part in any needed charity work, in addition to giving its time it has ever been ready to assist financially. At the time of the Johnstown flood this society appropriated all of its funds, which was no small amount at that time, for the benefit of the unfortunates in general, not limiting it to their own colleagues. During the last few months no small amount has been contributed by our members for the relief of our distressed colleagues in Belgium.

But enough of this. I am not addressing a body of strangers; most of you know all this and more. There are among our guests to-night many who know more about this society, who know more about its shining lights than I could tell you, because they have lived with them and observed them, talked with them and associated with them.

We profit much by our frequent scientific meetings, and in turn the public profits more, but I often feel that the great benefit from these frequent meetings is that we catch a little of that invisible influence which make real men of us by rubbing up against those of our colleagues who stand out just a little above the ordinary and thus become real men, and in turn find that what were mere acquaintances turn out to be real friends, for after all

> "What is Fortune, what is Fame?
> Futile gold and phantom name,
> Riches buried in a cave,
> Glory written on a grave.
>
> "What is Friendship? Something deep
> That the heart can spend and keep,
> Wealth that greatens while we give,
> Praise that heartens us to live."

A PRACTICAL PLAN FOR A HOLIDAY.

A somewhat novel idea is being tried out in Bury, England, whereby the busy practitioner can squeeze in a summer vacation of several weeks without loss of money or patients. The scheme is briefly this: A number of medical men residing in the same community have drawn up an agreement whereby each takes his vacation in turn, the other doctors in the agreement caring for his practice in his absence. In order to avoid possible personal antipathies on the part of patients, each doctor selects more than one substitute and before going away gives to his patients a card having on one side: "Dr. ——— requests one of the following (naming the physicians) to attend Mr. ——— until such a date." On the other side of the card are ruled spaces, to record calls. Should the patient have occasion to call in the substituting doctor, he gives him this card, and the doctor notes that and subsequent visits, mailing the original doctor the card upon his return. No pay is received by the substituting doctor, nor does he accept fees, except for obstetrical cases, when he receives one half. As the arrangement is a mutual or coöperative one, this works out equitably for all concerned. The advantages of this plan are obvious. It provides the practicing physician with an assured vacation every year and that, too, without loss. It would seem feasible to try out this plan, with whatever modifications may be necessary, in a number of cities in the United States, and a report on its pragmatic value would no doubt be interesting.—*Medical Record.*

GEORGE W. GUTHRIE, M. D.

Born, January 28, 1845. Died, June 1, 1915.

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ATHENS, JUNE, 1915.

DR. GEORGE W. GUTHRIE.

Dr. George W. Guthrie, ex-president of the state society and one of the most prominent physicians of the state, died at his residence in Wilkes-Barre on June 1, 1915, after a lingering illness dating from about September 1, 1914. In his death the community in which he lived has lost one of its most prominent and well-loved citizens, as well as its most prominent physician, and his loss will be keenly felt by the thousands with whom he has come in contact during a long and useful career.

The state society also has lost one of its best, a man who filled a large place in its councils, a man widely known and thoroughly respected by all who knew him. He had reached the three score years and ten, but we never thought of him as old for he was active, alert, ready for duty and keenly alive to all that was best in his profession even up to his last illness, and he himself was an exemplification of all that was best in that profession.

Although always a well-loved and much sought for family doctor, he was essentially a surgeon and as such he was widely known throughout the state.

Dr. George W. Guthrie was born in Guthriesville, Chester County, January 28, 1845. He was the son of John D. and Thamsin McFarlan (Kerlin) Guthrie. He was a descendant of Scotch Presbyterians who emigrated early in the eighteenth century and settled in eastern Pennsylvania. He received his early education in the public schools and graduated at the Pennsylvania State Normal School in Millersville in 1867 and soon after engaged in educational pursuits. He came to Wilkes-Barre in 1869, and was a prominent factor in reorganizing the public schools of Wilkes-Barre.

In 1869 he registered as a medical student with Dr. Edward R. Mayer, the most prominent physician of the Wyoming Valley, and in his leisure hours studied medicine in connection with his school duties. In 1871 he resigned his position as principal of the Washington Street School and entered Bellevue Hospital Medical College, New York City, where he attended lectures during the college year of 1871-1872. He later entered the University of Pennsylvania, from which he was graduated a Doctor of Medicine, March 13, 1873. He was subsequently, for a few months, resident physician to the Philadelphia Hospital (Blockley) and then located permanently in Wilkes-Barre for the practice of his profession. He was closely associated with Dr. Mayer and always spoke in loving remembrance of the aid and encouragement given him in the early days by his old preceptor.

On September 24, 1879, he was married to Sarah Hollenback, daughter of Hon. Harrison and Emily (Cist) Wright, from which union he is survived by two sons, Dr. George Donald, now surgeon in chief of Robert Packer Hospital, Sayre, Dr. Malcolm, now engaged in the practice of medicine in Wilkes-Barre; and by two daughters, Jessie Wright Guthrie and Jean McClintock Guthrie, now at home.

Since settling in Wilkes-Barre in 1873, Dr. Guthrie has filled a large place in the life of the community. He has been active in many directions, but that which he always placed first was the practice of his chosen profession in which he has been eminently successful, a practice always increasing with the passing years and by the thousands of patients who have known and loved him in the Wyoming Valley, his loss will be keenly felt, the loss of a skillful physician and the loss of a sterling friend.

Very soon after settling in Wilkes-Barre he was appointed one of the attending physicians of the Wilkes-Barre City Hospital, a position which he held for nearly forty years. He has been president of the hospital medical staff from 1896 and rarely was he absent from its monthly meetings. He resigned his position on the active staff in 1912 and was made consulting physician and *ex-officio* became a member of the Board of Directors. He was consulting surgeon of Pittston Hospital; also of Palmerton Hospital, Palmerton, and of Robert Packer Hospital, Sayre.

He was a member of the Luzerne County Medical Society and its secretary for seventeen years and later its president. Throughout his career he has been one of its most active and influential members. He was a member of the Lehigh Valley Medical Society and its president in 1912-13, and a member of the Medical Society of the State of Pennsylvania. He was a member of the American Medical Association in whose counsel and management he held a prominent position, being a member of its House of Delegates from Pennsylvania for many years until he refused further appointment in 1913, and a member of its Judicial Council for a number of years and at the time of his death. He was also a member of the American Climatological Association, and the American Surgical Association; also a fellow of the American College of Surgeons, and a member of its Board of Governors.

His work as a member of the state society was varied and valuable. He was second vice president in 1898-99 and president in 1899-1900, presiding at the session in Wilkes-Barre in 1900, when he delivered his address on "Medical Delusions." He was a member of the Board of Trustees from 1905 to 1911 and chairman of the Board in 1908-09. He was a member of the Committee on Publication 1888, 1889 and 1891-96; member of Committee on Religious Newspaper Advertising in 1906; member of Committee on Public Instruction, 1909; chairman of the Section on Surgery, 1908; member of Commission on Venereal Diseases in 1912; chairman of Committee on Plan for Uniform Regulation of Membership in 1912; chairman of Committee on Society Comity and Policy, 1914.

In addition to his address as president in 1900, he delivered the address on surgery in 1899; read a paper on "The Management of Pus Appendix" in 1903; a paper on "Boils" in 1904; a paper on "Surgical Tuberculosis" in 1906; a paper on "Postoperative Femoral Phlebitis" in 1907, and a paper on "First Aid Dressings in Wounds of Civil Life" in 1908. Besides these especially contributed to the state society, he has contributed many valuable papers, chiefly on surgical subjects, to the various medical societies with which he has been affiliated, all of which have been published in the transactions of the several societies.

He was a member of the Westmoreland Club, the Caledonian Club, and of Landmark Lodge No. 442 of Wilkes-Barre, and of the Medical Club of Philadelphia and of St. Andrews Society of Philadelphia.

Aside from his strictly professional career, he will be especially remembered for his work in the public schools of Wilkes-Barre, first as a teacher from 1869 to 1871, and later as a director in the school board, a position which he has held for nearly forty years. He has been most active and influential in their management and direction, and has watched and furthered their development and progress throughout all these years. When the history of the public schools of Wilkes-Barre shall be written, a large portion of their success will be attributed to the work of Dr. Guthrie.

Dr. Guthrie was a positive man, a man of strong convictions and one always ready to maintain these convictions; but withal a man singularly genial and companionable; his friends (and their name is legion) will remember him best for these kindly traits which endeared him to all. He loved the social hour and the commingling with friends, and he especially enjoyed the social gatherings of his medical brethren at whose banquets he was always an endeared and appreciated guest.

He was essentially a student of medicine, well read in its literature and always abreast of its progress, but amid the cares of a busy and exacting profession, he nevertheless found time for extensive general reading and he was always well informed on the general topics of the day. He especially loved poetry and could quote indefinitely from his favored authors with a charm that never failed to capture his hearers. Proud of his Scotch ancestry, he was always interested in the romantic history of Scotland and in the lives of her great men. One, however, of them all held first place in his heart. The poetry of his favorite, Robert Burns, was deeply imbedded in his nature and came readily to his tongue whenever occasion offered. Few could surpass him in his readiness to repeat or in his deep appreciation of the poetry of Robert Burns.

By the death of George W. Guthrie, the Luzerne County Medical Society has lost one of its oldest and most prominent members. Although for many years officially connected with the American Medical Association, an influential member of the state medical society, and of many other medical organizations, the meetings of which he faithfully attended and enjoyed, yet his chief delight was his first love, the Luzerne County Medical Society. From the day of his entrance into the medical profession to the day of his death, the interests of the county society were dear to his heart. He watched its growth with pride, he promoted its welfare with zeal, he guarded its honor with courage and conviction. He was more than a friend to every member, he was brother, one to whom the youngest or the oldest could go for counsel and help and come away strengthened and encouraged. His hearty handshake, his genial smile, the kindly expression of his piercing eyes, endeared him to the hearts of all his associates. He was truly a great man. He was great as a leader in his chosen profession; he was great in his literary attainments; he was great in the faithful performance of his work as an educator. He was one of the noblest and best men that ever deified friendship. His life ran true to his perspective; the rich red blood of a militant manhood flowed through his veins; men honored and trusted him and his friends loved him with true devotion. Death claimed him in the full maturity of a useful and well-spent life, and his large circle of friends pause to sorrowfully contemplate the inspiration and happiness his companionship gave them. "The pollen of his life has touched many other lives, and will bloom in sad, sweet memories that will come through the years in the quiet hours of retrospection."

The first banquet of medical men in Wilkes-Barre was held at the home of Dr. Guthrie and he was present at nearly every annual banquet of the medical society. All remember with pleasure his brilliant after dinner addresses—ofttimes reminiscent—sometimes prophetic—always charming. He possessed a really wonderful memory which was stored with many of the most beautiful gems of classical and modern literature—which upon occasion he would recite with a grace and charm that was peculiarly his own. How oft have we listened to his full, mellow voice as he has rendered one after another of these choice selections for our entertainment, selections which touched every chord of the human heart—the gay—the serious—the pathetic—the humorous.

Oh! charming Dr. Guthrie, our hearts are filled with sadness, and our eyes are filled with tears when we realize that that voice is now stilled in the silence of death. But in sweet memory we hear it still, and will hear until our memories fail and our hearts, too, cease to beat.

L. H. T.

PENNSYLVANIA PHYSICIANS AND LOCAL OPTION.

A recent champion of the liquor interests asserts that physicians are not in favor of any restrictive laws as applied to the sale of alcoholic preparations because such measures would interfere with the practice of medicine. It was urged in proof of this claim that the only physician Congressman from Pennsylvania made the opening speech against the Williams Local Option Bill at the public hearing on that bill, and that five of the six physicians in the House of Representatives voted against the bill. Since all the physicians in the House, as well as the Congressman, were seated as Republicans, it may be fair to inquire whether these men represented simply the views of the Republican Party or of scientific physicians.

Careful inquiry has failed to find that any medical society in the state went on record publicly as opposed to the above-mentioned bill, while three of our county medical societies and four local medical societies adopted resolutions strongly urging their representatives to vote for local option. One hundred physicians of Dauphin County signed a petition asking for the passage of the bill, and it is said that the name of every physician in Harrisburg who can be called a representative practitioner may be found on this list. More than seven hundred physicians of Philadelphia signed a petition urging the passage of the bill and the writer is told that very few medical men of standing in the profession refused to sign the petition.

The writer has learned of five medical societies in the state that asked their local courts this year to refuse all applications for license to sell intoxicating drinks. If any medical society went on record in favor of the granting of any license the JOURNAL will gladly publish the name of such society.

One of our largest county societies that has been in the habit of having "a lunch with alcoholic beverages at the annual election and smoker" voted last December by a vote of more than two to one to dispense with the "alcoholic beverages."

One of the county societies mentioned in the second paragraph adopted the resolution in favor of local option by a vote of seventeen to one, and their preamble was as follows:—

> "*Whereas,* We as physicians have frequent opportunity to see the poverty and degradation resulting from drunkenness, the baneful influence of alcohol upon the lives and bodies of those addicted to its use, and how the offspring of those addicted to alcohol are doomed to suffer for the sins of their parents in weakened will power, lowered resistance to disease, and great inclination to psychic disturbances."

Illustration after illustration might be given showing that Pennsylvania physicians, both socially and professionally, are using less and less alcohol in any form and it is very evident that the great majority of them do not wish to be classed as sponsors for alcoholic beverages.

S.

THE USE OF ALCOHOL INTERNALLY.

While alcohol has been thought by many to be a panacea for almost every ill, medical history in all ages furnishes the names of eminent physicians who have raised their voices against its use, claiming that it has little or no value either as a food or as a stimulant. The limitations of this department forbid further reference to these early writers and practitioners.

In 1911, in connection with the annual meeting of the British Medical Association in Birmingham, fifty medical men delivered addresses on alcohol and the human body, showing that alcohol diminishes the quality and the total output of both manual and intellectual work; that it predisposes directly and indirectly to disease; that in the treatment of nearly all diseases it does more harm than good; that the universal abstinence from alcoholic liquor as beverages would contribute greatly to the health, prosperity, morality and happiness of the human race.

The Life Extension Institute, an organization to fight disease through publicity, made public the first of this month a pronouncement, from a scientific viewpoint, upon the question of alcohol. The report was prepared by Dr. Eugene L. Fisk, director of hygiene of the institute, and unanimously approved by the ninety-four members of the hygiene reference board. On this board are such medical men as General William C. Gorgas; George H. Simmons; Walter B. Cannon of Harvard; Richard M. Pearce and A. E. Taylor of the University of Pennsylvania; Russell H. Chittenden and Lafayette B. Mendel of Yale; Lewellys F. Barker of Johns Hopkins; Mazyck P. Ravenel of Wisconsin; Theobald Smith of the Rockefeller Institute; William J. Mayo, the distinguished surgeon; J. N. Hurty, ex-president of the American Public Health Association; Harvey W. Wiley; George Blumer, dean of the Yale Medical School; Dudley A. Sargent of Harvard gymnasium; William G. Anderson of Yale gymnasium; and R. Tait McKenzie of University of Pennsylvania. The following are some of the conclusions found in the report:—

> "For many years alcohol was used as a heart stimulant in acute and chronic disease. Only in rare instances is it now so used, and chiefly in subjects who are accustomed to its use, who must be treated as drug habitués and not deprived of the drug influence to which the body has become adjusted. Alcohol, in the amounts formerly used as a heart stimulant, is undoubtedly a heart depressant.
>
> "Such a benefit as alcohol has conferred in acute disease has been due largely to its rapid utilization as a temporary food. It can be burned in the body as a fuel, and thus spare the tissues. For a brief time it can take the place of energy foods such as fats and sugars. But there is grave risk in using it for such purposes, in view of its effect on the heart, nervous system and blood elements. While it makes body heat, it also causes a loss of body heat through its action on the blood vessels. There are other ways to nourish and support the acutely ill without these attendant risks.
>
> "Alcohol is essentially a drug and not a food. There are many poisonous substances formed in the body, some of which, like alcohol, must be destroyed by the liver, or carried off by the kidneys. But that is no reason why we should eat these poisons and impose a further burden on our organs."

An interesting discussion has been going on in the *British Medical Journal.* Sir Victor Horsley, condemning the custom of serving rum to men on duty in the trenches, asserted that alcohol, even in small quantities, causes a loss of heat, a fall of body temperature, and a dulling of the special senses, and not only was of no assistance to the soldier in resisting the effects of fatigue, strain, exposure to cold and weather, but actually decreased his effectiveness. Horsley reviews the history of rum in the British Army from the time of Marlborough to the present day and sums up the scientific evidence against it, as well as the history of its use in armies in India, Egypt, the Crimea, our American Civil War, and in South Africa. He affirms that alcohol is not a safeguard to health, but is on the contrary a positive detriment. He urges the substitution of warm and nourishing drinks such as hot soup, milk, coffee, chocolate, etc., in place of rum, "seeing that warm nourishment enables a man to shoot better and encourages him to go forward, whereas rum makes him shoot badly and inclines him to sit still or even go back."

The statement on the part of Horsley's critics that a small ration of rum does not impair the effectiveness of the soldier, he replied to by reference to experiments made by the Swedish army authorities who discovered that one half the British rum ration caused a deterioration of fifty per cent. in accuracy of rifle shooting, and to the practical experience which has led the British naval officers to take their squadrons out of harbor for at least twenty-four hours before target practice and gun trials, in order to secure the highest possible scores.

Clinical Medicine, in an editorial on "The Passing of Alcohol," says: "Easily within the reasonable lifetime of those of us who are even on the shady side of middle life, this country will enjoy universal prohibition" as a result of "the growth of a calm, unprejudiced public opinion," and adds: "It will, of course, involve a little sacrifice by those among whom alcohol has never been an abuse. But a sacrifice of what? An indulgence, only; a luxury, and a questionable one at that. There is none of us that will be any the worse for the abstinence. Nay, let us be honest. There is not a single man Jack of us but will be the better for it. Not by the furthest stretch of imagination can drink be regarded as one of the necessary elements in the right to life, health and the pursuit of happiness which is guaranteed us by the constitution, and for which we are properly jealous. And the causes of crime and wretchedness and poverty and unhappiness which its abolishment will at one fell swoop remove make every other consideration look picayune in comparison." S.

"INTESTINAL STASIS."

The present issue celebrates the fiftieth anniversary of the Allegheny County Medical Society. It makes us feel more optimistic for the future of our profession, if we pause to consider the changes which the past fifty years have wrought. It is particularly fitting that this anniversary should have been observed by holding a scientific meeting of most unusual value; a symposium on intestinal stasis (practically a new subject in the field of medicine) by men from four different parts of the country, each qualified to speak with authority; nothing could better show the trend of modern medicine and its attainments, drawn from the laboratories of anatomy, physiology, biology, chemistry, physics, and electricity. Why does an announcement of a symposium on intestinal stasis, which a few years ago was a strange term, pack a large hall with busy doctors for an entire afternoon? Because the term has become correlated in the minds of the profession with those disturbances of functions, vegetative and nervous, which result from autointoxication, due to delay or retardation in the progress of the ingesta through the intestinal canal, with consequent modifications of the intestinal flora and the mechanism of digestion and dissimilation, phenomena that have led far afield many of the most conscientious and industrious members of the profession, surgeons as well as physicians. L. L.

DR. DIXON REAPPOINTED.

The Pennsylvania Senate on May 18, confirmed the appointment by Governor Brumbaugh, of Samuel G. Dixon, M.D., as Commissioner of Health.

Governor Pennypacker appointed Dr. Dixon on June 6, 1905, shortly after the passage of the Act of Assembly creating the State Department of Health. He was reappointed March 1, 1907, by Governor Edwin S. Stuart, and on March 1, 1911, by Governor John K. Tener.

Under his able direction the Pennsylvania Department of Health has achieved first place among the public health organizations in this country and the work which has been accomplished has attracted attention at home and abroad.

Dr. Dixon is known not only as an efficient executive sanitarian but as a prominent scientific investigator. From Handbuch der Pathogenen Mikroorganismen, published by W. Kolle and Dr. A. Wassermann, second edition, Volume V., Jena, 1913, Chapter 10, on "The Tuberculin Inoculation of Domestic Animals and the Protective Inoculation Against Cattle Tuberculosis," by Prof. Dr. W. Zwick and Dr. C. Titze, we quote the following:—

> "The first attempt at immunization against tuberculosis of cattle began with the first production of tuberculin by Robert Koch in the year 1890. When satisfactory results could not be arrived at with tuberculin and with watery glycerin extracts, it was sought to attain better results with toxins which had been produced in different ways from tubercular bacilli (Koch, Klebs, v. Ruck, v. Behring, Hirschfelder, Maragliano). However these efforts did not attain the desired end. In the year 1897, Robert Koch came to the conclusion that it was necessary in the treatment of tuberculosis, not only to attain immunity against the toxins, but also a bacterial immunity. Therefore he treated animals kept for experiment with tubercular bacilli both dead and living. The results were not encouraging. The bacilli were insufficiently resorbed, or produced sickness or the death of the animals experimented on. The passive attempts at immunization with an antitoxic serum of Maragliano, Burnheim, Babes and Broco, Neiman, McFarland, deSchweinitz and v. Behring likewise failed.
>
> In 1889, Dixon followed up the idea of immunizing animals by treatment of animals with tuberculous material separated from the tubercular bacilli by filtration, and by inoculation with weakened tubercular bacilli."

S.

THE GERBERICH POUND BILL.

The medical profession throughout this state and other states will be interested in the fate of the Dog Pound Bill. Senator Daniel P. Gerberich of Lebanon, chairman of the Senate Committee of Health and Sanitation, introduced and fathered this legislation. It provided a means by which institutions like the University of Pennsylvania, the University of Pittsburgh, and other scientific bodies, might obtain animals from the public pounds for research work conducted in the interest of all humanity. The animals were available only after having been condemned to death. The legislation was deemed to be imperative owing to the present difficulties surrounding the obtaining of animals for this purpose.

This measure was introduced in the Senate in April. The antivivisectionists sought to amend it and did amend it to such an extent as to nullify it entirely. The amendments were stricken out however, and the bill passed the Senate and was sent to the House in the form in which it was introduced. It reached the House in the closing days of the session. The bill passed first and second readings, and would have passed finally but for the eleventh-hour aid given the antivivisectionists by John R. K. Scott, a Philadelphia attorney and Republican Congressman-at-large, who has been the assiduous agitator for and defender of the antivivisectionists. It was Mr. Scott who prosecuted the professors of the University of Pennsylvania on charges of cruelty because of their experiments on animals in the interest of science and the advancement of research medicine.

One commendable feature of the fight for the enactment of the bill was the widespread interest among physicians of standing in Philadelphia and in several counties of the state. There is no doubt but that this bill would have been passed if the legislators had fully understood its terms and appreciated its importance. The fight has served to impress the idea upon the minds of many men conspicuous in the legislative progress of the state and has paved the way for success at some future time. S.

TWO OPTOMETRY BILLS VETOED.

The Legislature in 1913 so broadened the powers of the Bureau of Medical Education and Licensure that, in addition to providing for the examination and licensing of medical practitioners, it was authorized to regulate midwifery and the practice of the allied branches of drugless therapy. Acting under the advice of the attorney general, the Bureau attempted to regulate optometry as one of the branches of drugless therapy but the courts ruled that the examination of eyes for glasses is not the practice of medicine according to the present law. A bill (House Bill No. 205) was introduced in the Legislature which provided for the examination of optometrists now engaged in the practice of optometry and for the regulation by a course of study followed by examination of those who should later wish to receive a license as optometrists. The actual examinations were to be made by a board composed of optometrists, acting under the supervision of the Bureau of Medical Education and Licensure. This bill was perfectly fair but was opposed by the optometrists and was killed in committee.

The optometrists introduced a bill of their own, the Daix Bill, (Senate Bill 141) which was similar to the bill mentioned above but which left the whole control in the hands of an independent bureau. This bill passed both branches but was vetoed by Governor Brumbaugh, May 1, in the following message:—

"This bill is designed to regulate the practice of optometry in Pennsylvania.

"It aims to do this by creating a new examining board to license optometrists. This board is created in a way that is contrary to all precedent. To limit the executive in his appointments to a professional body to whom is intrusted the conservation of human vision by compelling and directing him to appoint only those selected by the executive committee of a society that has no obligation or responsibility to the people, and a society whose members are in no legal way related to the people at large, is contrary to the policy of law.

"Only members of said society would be eligible to place on the board, notwithstanding the fact that there may now be and in the future there may arise other societies whose function it is or may be with equal competence to administer to the human eye. In the formation of other state boards the executive is not so limited, and no reason has been given me why this limitation should be made. The judgment and the discretion of the executive can not be delegated to legally irresponsible bodies. This restriction is fundamentally wrong.

"There is no convincing reason why these practitioners should not voluntarily place themselves under the existing licensing body of the commonwealth.

"Under Section 4 one member of this proposed board can secure the granting of a license, a situation wrought with grave menace. Unless a commanding reason is manifest, no additional examining boards for professional regulation should be created.

"The standards of professional service in this commonwealth are and have been high. We are a center of professional services of the most commendable standards. These standards must be safe-guarded and exalted. No official act of the commonwealth should in any way lessen the standards of admission to a professional career in this commonwealth nor the standards of professional training to fit for technical service.

"The human eye is priceless. The care and treatment is a sacred service. The sanction of the state, which is the sanction of the people, can not be lightly bestowed."

After the veto of the Daix bill the representatives of the optometrists, of the Commission on the Conservation of Vision and of the Bureau of Medical Education and Licensure held a conference in the office of Attorney-General Brown and it was reported that an agreement had been reached by which the board should consist of three medical members, three optometrists with the superintendent of public instruction as chairman. However the optometrists, during the last fortnight of the legislature, rushed through the Dunn Bill providing for an independent board with only one medical member. This bill was vetoed by Governor Brumbaugh on June 5 and we give herewith some excerpts from his veto message:—

"This bill defines and relates to the practice of optometry in this commonwealth and creates a state bureau of optometrical education for the purpose of licensing optometrists. A similar bill was vetoed earlier in the session. With certain amendments intended to remove certain objectionable features, it is again passed by the assembly. This bill provides a penalty, but does not authorize any one to institute prosecution. Its enforcement is, therefore, not provided for, and it would not regulate the practice of optometry.

"In Section 4 it requires a unanimous vote of seven members to refuse to grant a license. In the sentence immediately following four members are given the power to grant a license. This is a fatal contradiction.

"No one is designated to pass upon the preliminary education of applicants. The last sentence of Section 6 assumes the validity of a law that was repealed four years ago. There would also be criticism well-founded in the limitation of advertising to certain newspapers to the exclusion of others. These technical objections should be considered in connection with the general objections given in the former veto.

"The practice of optometry ought to be regulated in this commonwealth, but not by creating in this uncertain way a new additional licensing body."

It is only proper that the profession and the laity should know that the medical profession went to the limit in making concessions. To have conceded more would not have been fair to the better men now engaged in the practice of optometry, nor would it have afforded the public proper protection. S.

SCIENTIFIC EXHIBIT FOR PHILADELPHIA SESSION.

The Committee on Pathologic Exhibit for the state medical society in September invites exhibits from hospitals and individuals throughout the state. It is our desire to get together a collection that will be of value to practicing physicians instead of merely interesting to trained pathologists only. Undoubtedly there are outside of our large museums many specimens which, with a well-worded descriptive label, would be of interest and value to the members attending the session. If the contribution is only a small specimen or two that can be put in a suit case, let us know about them now and bring them to the meeting in the fall. Our space will be limited, hence those who can and will add to the exhibit will confer a favor on the committee by communicating as soon as possible with the chairman, Dr. A. G. Ellis, Jefferson Medical College, Philadelphia. J. T. R.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the May Journal was printed:—

Adams County: *New Members*—Wilson F. Hollinger, Abbotstown; E. A. Miller, East Berlin.

Allegheny County: *New Members*—Joseph M. Jackson, John M. Luther, Irwin J. Moyer, Pittsburgh. *Deaths*—J. Guy McCandless (Jefferson Med. Coll., '63) in Pittsburgh, May 23, aged 75; John Steele Mabon (Univ. of Pennsylvania, '80) in Pittsburgh, May 20, aged 58; Jacob Waller Phillips (Western Pennsylvania Med. Coll., Pittsburgh, '90) while being taken to the West Penn Hospital, from a fracture of the skull, the result of an overturning of an automobile, April 29, aged 55. *Removal*—Elizabeth L. Martin from Sewickley to Princeton, N. J., R.D. 3.

Armstrong County: *New Member*—Benjamin J. Longwell, Seminole, R.D. New Bethlehem (Clarion Co.).

Berks County: *New Member*—Morris B. Oberholtzer, Boyertown (by transfer from Philadelphia County Society). *Removal* George S. Deibert from Athol to Stoyestown, R.D. 2 (Somerset Co.).

Bucks County: *New Members* George T. Fox, Bristol; Harold Bruce Boring, Richlandtown.

Cambria County: *New Members*—Harvey M. Griffith, Conemaugh; Harry Somerville, Chest Springs.

CLEARFIELD COUNTY: *New Member*—John J. McDonald, Ansonville. *Removal*—Louis W. Wright from Glen Richey to Mahaffey, R.D. 1.

DAUPHIN COUNTY: *New Member*—Frank L. Shenk, Harrisburg.

DELAWARE COUNTY: *New Member*—William A. Raiman, Swarthmore.

FRANKLIN COUNTY: *New Member*—Howard Lane Hull, Chambersburg. *Death*—Horace M. Fritz (Jefferson Med. Coll., '79) in Quincy, May 12, from cerebral hemorrhage, aged 60. *Removal*—Samuel A. Silk from Farrell (Mercer Co.) to Sharon (Mercer Co.).

HUNTINGDON COUNTY: *Death*—William W. Heaton (Jefferson Med. Coll., '92) in Saltillo, May 27, from acute streptococcus infection, aged 50.

LANCASTER COUNTY: *Death*—Daniel R. McCormick (Jefferson Med. Coll., '82) in Lancaster, May 31, from apoplexy, aged 57.

LAWRENCE COUNTY: *New Members*—Patrick J. Brice, New Castle; William B. Campbell, Hillsville.

LUZERNE COUNTY: *Deaths*—George W. Guthrie (University of Pennsylvania, '73) in Wilkes-Barre, June 1, from a complication of diseases, aged 70; Benedict Jones Wetherby (Rush Med. Coll., Chicago, '84) in Wilkes-Barre, May 31, aged 58.

MCKEAN COUNTY: *New Member*—James V. Otto, Port Allegany (by transfer from Potter County Society). *Death*—William J. Armstrong (Bellevue Hospital Med. Coll., '83) in Kane, May 31, from heart disease, aged 61.

MERCER COUNTY: *New Member*—Robert Edward Mehler, Farrell.

MONTGOMERY COUNTY: *Removal*—Elmer A. Kell from Pottstown to 225 North Fifth St., Reading (Berks Co.).

NORTHAMPTON COUNTY: *New Member*—Arthur S. Kemper, Bethlehem.

NORTHUMBERLAND COUNTY: *Death*—Alfred Craven Clark (Jefferson Med. Coll., '69) in Sunbury, May 15, from acute obstruction of the bowels, aged 70.

PHILADELPHIA COUNTY: *Deaths*—Henry D. Moore (Jefferson Med. Coll., '87) in Philadelphia, recently, aged 50. *Transfer*—Morris B. Oberholtzer to Berks County Society. *Removals*—Howard S. Kinne from Willow Grove (Montgomery Co.) to 747 Arch St., Williamsport (Lycoming Co.); Joseph V. Klauder from New York City to 3328 North Broad St., Philadelphia.

POTTER COUNTY: *New Member*—J. A. Dennison, Harrison Valley. *Transfer*—James V. Otto to McKean County Society.

SUSQUEHANNA COUNTY: *New Members*—Warren W. Preston, Montrose; Arthur J. Denman, Susquehanna; T. Oliver Williams, Brooklyn.

VENANGO COUNTY: *New Member*—Clarence E. Imbrie, Clintonville.

WASHINGTON COUNTY: *Removals*—Harrison L. Brehmer from Washington to 113 East Walnut St., Scranton (Lackawanna Co.); Walter H. Cowan from Donora to Slippery Rock (Butler Co.).

WESTMORELAND COUNTY: *New Member*—William J. Latimore, Herminie.

YORK COUNTY: *Death*—Niles H. Shearer (Univ. of Maryland, Sch. of Med., Baltimore, '66) in York, May 5, aged 75.

S.

STATE NEWS ITEMS.

MARRIED.

Dr. Alexander Randall and Miss Edith Tilghman Kneedler both of Philadelphia, June 2.

Dr. Richard Clarence Beebe, Lewes, Del., and Miss Edna Thompson, Paulsboro, N. J., April 28.

Dr. Harry Bond Wilmer, Philadelphia, and Miss Helen Lewis Parker, Denver, Colo., in Rosemont, May 26.

Dr. T. Grier Miller, Philadelphia, and Miss Sarah Fenner George, Baltimore, Md., in Philadelphia, June 3.

DIED.

Dr. Gilbert L. Parker (Jefferson Med. Coll., '74) in Philadelphia, May 19, aged 82.

Dr. B. Frank Zerbe (Jefferson Med. Coll., '78) in Schaefferstown, May 21, aged 61.

Dr. Dwight Reed (New York Univ., Med. Coll., '48) in Honesdale, recently, aged 91.

Dr. Isaac Welsh Brown (Univ. of Pennsylvania, '07) in Philadelphia, April 28, aged 33.

Dr. John S. Mack (Univ. of Pennsylvania, '92) of Slatington, in Buffalo, May 30, aged 45.

Dr. Edward E. Goodman (Jefferson Med. Coll., '74) in Altoona, June 1, from apoplexy, aged 66.

Dr. George Frederick Horn (Jefferson Med. Coll., '14) in Darby, April 29, from neuritis, aged 22.

Dr. Isaac R. Landis (Jefferson Med. Coll., '65) in Philadelphia, May 29, from Bright's disease, aged 73.

ITEMS.

The New Babies' Hospital of Philadelphia, Manoa Road, near Llanerch, was opened May 15.

Dr. S. P. Heilman, Lebanon, was on June 9 elected a trustee of Franklin and Marshall College.

Dr. Robert Kilduffe, Jr., has been elected director of the pathological department of the Chester Hospital.

The Pottsville Hospital receives $50,000, and the Pottsville Children's Home receives $25,000 from the estate of James Muir.

Dr. Hobart A. Hare has resumed his practice and hospital work since recovering from an attack of pneumonia.

Temple University at its recent annual commencement granted the degree of M.D. to twenty-four of its students.

Drs. Theodore B. Appel and John L. Atlee, Lancaster, received the honorary degree of S.C.D. from Franklin and Marshall College, June 9.

The Palmerton Hospital has drawn plans for a children's ward and a maternity ward which will increase its capacity from fifty to eighty beds.

Dr Samuel A. Silk, for the last two and one-half years a member of the staff of the Mont Alto State Sanatorium, has resigned to take up practice in Sharon.

Dr. Robert N. Willson is conducting three practical courses in internal medicine in the wards of the Philadelphia General Hospital during the summer months.

Dr. John B. McAlister, Harrisburg, delivered the address at the commencement exercises of the training school for nurses of the Wilkes-Barre City Hospital, May 21.

Dr. Walter H. Brown, formerly of Richlandtown, has been appointed district health inspector of Essex district, Massachusetts, which has a population of 700,000.

Dr. William L. Rodman was guest of honor at the annual social evening of the West Branch of the Philadelphia County Medical Society held at Hotel Marlyn, May 17.

Diphtheria in Spring City has necessitated the closing of the Franklin Street school building. This is the second time the school has been closed for this purpose within two weeks.

Drs. W. W. Keen and J. Montgomery Baldy delivered addresses at the graduating exercises of the Allentown Training School for Nurses, on May 27. Diplomas were awarded to fifteen young women.

Dr. Howard B. Lewis, who has been an instructor in physiological chemistry at the University of Pennsylvania for two years, has accepted an appointment as associate professor in the University of Illinois.

The Indiana County Medical Society met in Indiana, May 11. Dr. C. E. Rink presented a paper on "Physical Examination of the Chest," in which he reviewed the various diagnostic methods, their application and significance.

University of Pittsburgh Commencement. The School of Medicine, University of Pittsburgh, held special clinics during commencement week, June 14-16. George W. Guthrie, Ambassador to Japan, delivered the address to the graduates.

Dr. and Mrs. J. J. Coffman, Scotland, were pleasantly surprised on May 14, by the arrival at their home of a party of friends, who came to celebrate the twenty-fifth anniversary of their marriage, and to leave with them suitable gifts to commemorate the occasion.

Members of Bureau of Medical Education and Licensure. Governor Brumbaugh has appointed Drs. C. L. Johnstonbaugh, Bethlehem, and Adolph Koenig, Pittsburgh, to succeed themselves, and Dr. Irvin D. Metzger, Pittsburgh, in place of Dr. William A. Stewart.

Dr. Ella B. Everitt, Philadelphia, was on June 9 elected president of Wilson College, Chambersburg. Dr. Everitt is professor of gynecology at the Woman's Medical College, and also has a large private practice, which she may not be willing to relinquish in order to serve Wilson College, from which she was graduated in 1888.

Medico-Chirurgical Commencement. The thirty-fifth annual commencement of the Medico-Chirurgical College of Philadelphia was held June 4 there being eighty-three graduates in medicine; forty-seven in dentistry; forty-two in pharmacy; five in pharmaceutical chemistry. The Doctorate Oration was delivered by Clinton Rogers Woodruff, Esq.

Education of Women Physicians. A complete set of moving picture films, showing the work of educating women physicians in the Woman's Medical College of Pennsylvania, have been especially prepared and passed by the Commission on Women's Education and will be exhibited at the Temple of Education in the Y.W.C.A. Bldg., at the Panama-Pacific Exposition.

Medical Missionary Meeting. At the twenty-fifth annual meeting of the Pennsylvania Medical Missionary Society held in Overbrook, April 29, an address was made by Dr. W. F. Jeffries of St. John's College, Shanghai, China, and the secretary reported that the society had spent $26,000 in educating medical missionaries and $2000 for other philanthropic purposes.

University Commencement. The 159th annual commencement of the University of Pennsylvania was held June 16. Dr. Felix E. Schelling, head of the English department, was the orator of the day. Fifty-seven received the degree of Doctor of Medicine; 3, Doctor of Public Hygiene; 1, Certified Sanitarian; 156, Doctor of Dental Surgery, and 26, Doctor of Veterinary Medicine.

Summer Course in Anatomy. The Department of Anatomy, University of Pittsburgh, School of Medicine, will give six summer courses in anatomy as follows: Gross anatomy; cytology, histology and splanchnology; hematology; embryology; neurology, and anatomy of the eye, ear, nose and throat. These courses will be held from July 5 to August 28, inclusive.

Jefferson Commencement. The ninetieth annual commencement of Jefferson Medical College was held June 5 at the Academy of Music. There were 145 graduates. The annual address to the students was delivered by Dr. Victor C. Vaughan, Ann Arbor, Mich. His subject was "The Doctor's Ideals." The degree of LL.D. was conferred on Dr. Vaughan by the president of the board of trustees.

St. Joseph's Hospital, Philadelphia, will receive $5000 from the estate of Thomas A. McElmell, the same to be used to endow a free bed in memory of a brother, the late Rear Admiral Jackson McElmell, U.S.N. St. Agnes Hospital receives a like amount to endow a bed in the name of the testator. Some $50,000 more will eventually be divided among St. Joseph's Hospital, St. Mary's Hospital and St. Agnes' Hospital.

"Philadelphia Medical Clinic." M. Wilkowski, J. Grinius, Dr. T. J. Russell and Dr. W. S. Yoder, officials and employees of the Philadelphia Medical Clinic, were arrested in Philadelphia, recently, charged with using the U.S. mails to sell fake medicine. The bail was at first fixed at $3500 each, but after they had spent several days in Moyamensing prison without finding bail, the bail was reduced to $1000 each.

The Alumnae Association, Woman's Medical College of Pennsylvania, held its fortieth annual meeting June 3 and 4. Various scientific papers were read and discussed and on the evening of the 3d there was an annual reception and dinner at the Hotel Adelphia. At a business meeting it was proposed to send some forty women physicians to operate an American hospital in France and give free treatment to the wives and children of soldiers.

The Pennsylvania Department of Health has won the grand prize at the Panama-Pacific Exposition. Dr. Samuel G. Dixon, Commissioner of Health, who planned the exhibit, gets honorable mention. The exhibit shows the work done in this state to reduce tuberculosis and other diseases. One section is devoted to the methods and results, which have brought about a 75 per cent. reduction in typhoid fever during the last ten years, and another section is devoted to the medical inspection of the schools in the rural districts of the state.

Jefferson Alumni Meeting. The annual banquet of the Alumni Association of Jefferson Medical College was held June 4. Dr. Francis T. Stewart acted as toastmaster and speeches were made by Mr. Potter, president of the board of trustees; Dr. William W. Keen and Prof. J. Parson Scheffer. The announcement was made of the promise of a gift of $100,000 by one of the diners for the purpose of swelling the endowment fund, the only stipulation being the raising of an equal amount by the alumni of the institution. The name of the donor was withheld. At this time Dr. William W. Keen, emeritus professor of surgery in Jefferson Medical College, was presented with two beautiful silver platters as a token of esteem and love by the association. Dr. B. Franklin Royer, Harrisburg, was elected president for the coming year.

Woman's Medical College Commencement. Thirty young women received the degree of M.D. from the Woman's Medical College of Pennsylvania, June 2. Two were from India and one each from Russia, Spain, Cuba and Trinidad. The address was given by Dr. Richard C. Cabot, Boston, and was not entirely satisfactory to the faculty or to the graduates. The following excerpts of his address are taken from the Philadelphia *Press*: "The great majority of women doctors I have known have been either disappointed or dissatisfied women, and I think the reason for this is that they are doing work that they do not like. No doubt women can do great research work and excellent service in abstract investigation, but the question is, do they want to do it, does such work make them happy? I think it does not. Many women do not like the practice of medicine after they have learned their profession. They are happy in college, but it is when they start in a general practice that the trouble begins. . . . Now, why do not the women doctors do the work in which they can excel? Why do they not take advantage of their natural excellencies? Humanity as a whole has access to only about one tenth of all that medical science knows. Why do not they apply themselves to the work of distributing this knowledge? The fields of school and industrial hygiene, factory inspection, campaigns against infant mortality, social service in hospitals, and many others offer them the best opportunities. The trouble is that women have been imitating men in medical practice. They have failed to see that there is a branch of medical service for which they are peculiarly fitted. This branch is not a small branch. It is one of the broadest and finest branches of the work. It is the branch I have chosen for myself, so you can see I am not advising you to take up something I myself have avoided."

The Pediatric Society of Western Pennsylvania. Seventeen men met at a dinner at the University Club of Pittsburgh, May 5, and formed this society, electing the following officers: President, Dr. P. J. Eaton; vice president, Dr. Theodore Elterich; secretary-treasurer, Dr. Henry Price; counselor, Dr. Ogden Edwards, Jr., all of Pittsburgh. A selection from the constitution is as follows:—

ARTICLE II.—OBJECTS OF THE SOCIETY.

The objects of this society shall be: First, to unite the physicians, teachers and others in this part of the state who are engaged in the scientific study of infancy and childhood. Second, to promote, by its concerted efforts, scientific research in the department of pediatrics, and in any field of child conservation. Third, to foster a general interest in pediatrics by physicians, and to extend the knowledge of approved methods used for the welfare of children. Fourth, to study the problems of infant mortality, and to popularize a knowledge of infant hygiene, and of the means for the protection of child life.

ARTICLE III.—MEMBERSHIP.

Section 1. Any physician residing in Western Pennsylvania who is a member of a medical society in affiliation with the American Medical Association, and who shows special qualifications in pediatric practice, or who has been in general practice for ten years, or who has done some original scientific work in pediatrics, or who is engaged in teaching pediatrics, or who is doing pediatric work in research laboratories, or who is holding a pediatric position in a dispensary or hospital, may become a member of the society.

Section 2. Any person who is engaged in the scientific study of childhood, or in teaching subjects relating to the welfare of children, or engaged in investigations relating to the welfare of children, or engaged in investigations relating to the economic problems of child life, may become a member of this society.

Causes of Pennsylvania Industrial Accidents. The total number of accidents reported to the Department of Labor and Industry during the year 1914 is 38,126. Adding the number of accidents reported to the Mining Department and to the Public Service Commission, the grand total is 53,113. This number can not be considered the sum of all accidents that occur in our state, since the accidents reported to the Department are only those occurring in industrial establishments. There is also a law in the Department that accidents occasioning a loss of less than two days' work need not be reported. Therefore, 53,113 represents only a part of the total number of accidents for the past year.

The causes from which the greatest number of accidents occur are: first, in hand labor, chiefly from being caught between, or struck by, material, or hurt with tools, a total of 20,339 accidents; second, from falling from ladders or scaffolds into unprotected holes or slipping or tripping, a total of 4178 accidents; third, from coming in contact with moving machinery, a total of 2836 accidents; fourth, from burns of various kinds, a total of 2444 accidents. Figures of such size, representing accidents from being caught or struck by material, or from coming into contact with moving machinery would seem to show carelessness on the part of workmen, or lack of sufficient guards. If the proper machine guards were installed and used in the proper manner, the majority of such accidents could surely be avoided.

The Inspectors of the Department of Labor and Industry have found in their visits to industrial plants that the greatest force towards the elimination of accidents and the maintenance of personal safety is the establishment of safety organizations. The education of workmen in the avoidance of careless methods, and in the thought of individual responsibility, is the greatest force in the furtherance of the safety movement.

The following is a summary of the reported accidents by nature of the injury:

Nature of Injury.

Burns and scalds	3,018
Crushes and bruises	14,599
Cuts and lacerations	11,536
Fractures, sprains and dislocations	6,130
Hernia	73
Puncture	616
Blood poisoning	114
Unclassified	1817
Loss of parts:—	
Eyes: One, 25; both, 2	27
Arms: One	4
Hands: One	7
Fingers: One, 126; more than one, 40	166
Legs: One	3
Feet: One, 4: both 1	5
Toes: One, 7; more than one, 4	11
Total	38,126

Degree.

Males: Fatal. 377; serious 3090; minor, 34,437; total, 37,904. Females: Fatal, 2; serious, 32; minor, 188; total, 222.

GENERAL NEWS ITEMS.

The New Hampshire State Medical Society held its 124th annual meeting in Concord, May 19.

The American Pediatric Society held its twenty-seventh annual meeting in Lakewood, N. J., May 24.

Dr. Abraham Jacobi was guest of honor at a dinner at Hotel Astor, May 6, the occasion being his eighty-fourth birthday.

The Medical and Chirurgical Faculty of Maryland at its annual meeting in April, elected Drs. J. Whitridge Williams and Joseph I. France, both of Baltimore, president and secretary, respectively.

The American Association for the Advancement of Science and affiliated societies will hold a meeting in San Francisco, August 2-7. Further information may be secured from Albert L. Barrows, University of California Library, Berkeley, Cal.

Prizes for Vaccine Discoveries. Professor M. A. Vincent of the Val de Grace Military Hospital, Paris, received $10,000, and Professors Chantemesse and Vidal, each received $5000, prizes awarded for discoveries in connection with antityphoid vaccines.

The Nation for June 3, contains an article on the war by Dr. G. W. Crile, Cleveland, in which he gives his personal experiences in France and Belgium together with suggestions as to how the tendency towards war may be lessened in the future.

Mme. Marie Depage, wife of Dr. Antoine Depage, Chief of the Red Cross of Belgium, lost her life in the Lusitania disaster. She had been in this country on a mission for the Belgian Red Cross, and with her was lost $100,000 which she had collected for the Red Cross needs of her country.

The St. Louis Skin and Cancer Hospital receives the larger part of the income of the $2,000,000 estate of George D. Barnard, according to his will filed June 7th. An annual bequest of $250 is made to buy tickets to the concert of the St. Louis Symphony Orchestra for inmates of the Missouri School for the Blind.

The Council on Pharmacy and Chemistry. During May the following articles have been accepted for inclusion with New and Nonofficial Remedies: Papaverine hydrochloride, Roche, papaverine hydrochloride, Roche, tablets, papaverine sulphate, Roche, ampules, Hoffmann-LaRoche Chemical Works; ouabain ampules, H. W. and Co., Hynson, Westcott and Company; papaverine hydrochloride, Merck, Merck and Company.

Fatal Poisoning by American Water Hemlock. The recently published monthly bulletin of the Massachusetts State Department of Health for February, 1915, contains a report of a case of fatal poisoning by the root of the American water hemlock, eaten by a farm laborer while at work in Milford, Mass. The poisoning was symptomatized by nausea, vomiting, vertigo, widely dilated pupils, convulsions, unconsciousness, coma and death in one hour after ingestion, the amount eaten being about an ounce. On investigation the plant proved to be the American water hemlock (*cicuta maculata*), commonly known as spotted cow bane or beaver poison.

Fifteen Medical Missionaries Wanted. The American Board of Commissioners for Foreign Missions needs at once fifteen surgeons and physicians for work in mission fields. Nine are wanted for China, four for Turkey, one for Africa, and, most urgent of all, one at once for relief work in Serbia, with station at Monastir. The candidates should be not over thirty-five years of age. In equipment the board requires a degree from a distinctly first-class medical school and, in addition, an internship or its equivalent. Specialization is not demanded, though special preparation is welcomed. Details as to service may be secured from Dr. C. H. Patton, 14 Beacon Street, Boston.

A New Medical School for Columbia. It is announced that Columbia University is going to build one of the largest medical schools in the world on a part of the site which was formerly the American League baseball grounds at 165th Street and Broadway, which the Presbyterian Hospital recently purchased. Columbia University and the Presbyterian Hospital have joined forces in the creation of the new school and hospital. The project includes the new medical school to replace the present College of Physicians and Surgeons, and the removal of the Presbyterian Hospital from the East Side to the new site. Columbia University has set five years as the time limit for the raising of a fund of $7,500,000, which will include the cost of its share of the land, the cost of building a new medical school, and an endowment fund for the maintenance of the school.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession up to and including the week ending June 12, 1915.

Contributions:—

Receipts previously reported,	$6720.50
Dr. Franklin B. Miller, Pittsburgh,	25.00
Dr. N. S. Jarvis, Captain U.S.A., New York, N. Y.,	15.00
Dr. Charles G. R. Jennings, Elmira, N. Y.,	29.00
Dr. H. E. Jenkins, P.A. Surgeon, U.S.N., Port Royal, S. C.,	5.00
Dr. Luther G. Paul, Boston, Mass.,	5.00
Dr. M. C. Smith, Lynn, Mass.,	5.00
Arkansas Medical Society, Little Rock, Ark.,	50.00
Dr. Charles Henderson Miller, Chicago, Ill.,	10.00
Dr. H. M. Manning, P.A. Surgeon, U.S.P. H.S., Charleston, S. C.,	5.00
Anonymous—K, Toledo, Ohio,	5.00
Dr. Dwight G. Kreul, Davenport, Iowa,	10.00
M. L. H., Wallum Lake, R. I.,	3.00
Knox Co. Medical Society, Fredericktown, O.,	10.00
The Medical Club of Portland, Portland, Ore.,	25.00
Dr. Edward E. Bancroft, Wellesley, Mass.,	10.00
Dr. Thomas St. Clair, Latrobe,	5.00
Dr. Fred T. Murphy, St. Louis, Mo.,	50.00
Dr. Herman Grad, New York N. Y.,	10.00
Dr. J. E. Talley, Philadelphia,	10.00
Dr. Leonard W. Ely, Palo Alto, Calif.,	5.00
Dr. Arthur G. Larkin, New York, N. Y.,	10.00
Dr. John A. Hawkins, Pittsburgh,	10.00
Medical Society of the Co. of Greene, Catskill, N. Y.,	15.00
Wilson Co. Medical Society, Fredonia, Kan.,	15.00
Dr. Robert C. Davis, Johnstown,	5.00
Dr. Emery Marvel, Atlantic City, N. J.,	25.00
Dr. G. J. Hagens, Chicago, Ill.,	15.00
Medical Society of the County of Westchester, White Plains,N.Y. (Second contribution)	2.50
Rockland County Medical Soc., Nyack, N. Y.,	28.00
San Luis Valley Medical Soc., Alamosa, Colo.,	25.00
New England Hospital Med.Soc., Boston,Mass.,	30.00
Aux Plaines Branch of Chicago Med. Soc., Maywood. Ill.,	44.00
Vigo County Medical Soc., Terre Haute, Ind.,	25.00
Dr. Jacob Schwinn, Wheeling W. Va.,	10.00
Dr. John Bryant, Boston, Mass.,	10.00
Drs. Robert J. and John L. Sagerson, Johnstown,	10.00
Dr. Catherine H. Travis, New Britain, Conn.,	2.00
Dr. George B. Lake, Manila, P. I.,	2.00

Dr. M. J. Kenefick, Algona, Iowa,	10.00
Dr. E. W. Link, Palestine, Texas, (Second contribution),	10.00
Total receipts,	$7312.00
Disbursements:—	
Week ending May 22, 178 boxes at $2.28,	$405.84
Week ending June 12, 140 boxes at $2.28	319.20
Previously reported:—	
1625 boxes at $2.20,	3575.00
1274 boxes at $2.30,	2930.20
35 boxes at $2.28,	79.80
Total disbursements,	$7310.04
Balance,	$1.96

Owing to the fact that it is not permissible to ship salt into Belgium, a recent change in the price of the boxes of food from $2.30 to $2.28 caused an error in the report of May 1. The correction is made in this issue.

F. F. SIMPSON, M.D., Treasurer,
7048 Jenkins Arcade Bldg., Pittsburgh.

The National Conference of Charities and Correction closed its forty-second meeting in Baltimore, May 19. The following excerpts are from the report by T. J. Edmonds, Cincinnati:—

Mrs. Glenn struck the key-note in the presidential address, "A Prelude to Peace." She did not talk war issues; she did not even try to foretell its time of closing or its after effects. Her theme was this: that whatever the causes and whatever the obvious results, it is our business as social workers and as Americans to be ready to offer to Europe the real sources of strength for recuperation. These sources of strength lie in the restoration of normal family life, in the ability to return to the ordinary operations of daily business, in the education of the next generation for the big tasks before them, in the ability of the average man to stand up to the drudgery of the day's job and to retain his grip on the better things of life without the stimulus of brass bands and spectacular events, and in the readiness to sink differences and to forget them.

Neither did any other speaker in the entire Conference program indulge in war talk. The Conference was so neutral that President Wilson would have approved, so peaceful that Bryan would have enthused and withal so warlike that Roosevelt would have been delighted. Warlike, however, only in its marching spirit, its *esprit de corps* and in its faith, courage and inspiraton. We have heard that war submerges party differences; so the Conference program sounded this note: that social workers are engaged in a war on destructive social conditions; that the general cause is bigger than the particular work of any organization or individual; that we must look at the field as a whole and work for the entire social program rather than for the preëminence of our own little function. This was seen in the discussions on public and private outdoor relief. The charity organization movement is offering its contribution of fact and technic freely to the public department; the settlements are promoting the organization of publicly controlled social centers; the children's societies are busy building systems for boards of state charities and children's guardians; and public and private workers join in condemnation of the system of state subsidy to private charities. It looks like the swing of the pendulum. A half century ago or more the disgust of thinkers with the crude and often corrupt methods of public relief led to the organization of charity organization societies and to a wholesale loss of faith in public relief; to-day the movement is back toward public administration. But it is not merely the wave movement so common in all history; the new movement has a higher crest; public social work has accepted the technic and the ideals of private philanthropy; it is an altogether different thing; it really spells triumph for the charity organization movement. The fine thing about it all (and this was brought out at every Conference session on "The Family and the Community") is that both sides see it; the charity organizationist is willing to make his contribution and surrender his privilege when the public officer is ready to use it well, and the public official is eager to welcome the contribution of better methods; in fact, he will have none of the old methods.

War has its strategists and its tacticians; and the present war emphasizes the value of the former. Social workers have learned to become strategists and to plan broadly for the future. This was shown in the discussions of the unemployment situation. Out of the turmoil of last winter, the inevitable disruption of regularity, and perhaps of standards, has come a planning for the future in a bigger way than ever before. Remedies were suggested for the industrial displacements of the present period and even for the displacement which will probably follow the close of the war, in an ascending scale, as follows: Preparation for adequate relief, of course; public "made work"; coöperating national, state and city labor exchanges; dove-tailing of industries with alternating busy and dull seasons; regularization of industries within themselves; education of the market away from the vagaries of fashion and demand which make for rushes and lay-offs; illness insurance; unemployment insurance.

The breadth of planning which characterized the Conference was well shown in the state-wide program submitted by the committee on children. This advocated a state board with adequate provision by means of institutions and "out-patient" work for all four groups of unfortunate children, namely, dependents, delinquents, defectives and neglected.

As a whole the Conference was best because of (1) the unity of its carefully planned program; (2) the emphasis on public responsibility; (3) the recognition on the part of the public group of the prime necessity of high standards of efficiency; (4) the attention given to broad community plans and preventive measures; (5) the sane conservatism of the remedies proposed; (6) the harmony of feeling among groups of workers; (7) and the indefinable inspirational quality of the whole thing which can not be spread on paper and which can not be realized unless one were there to feel it.

The forty-third Conference will meet at Indianapolis next year. Its officers, as elected, are: President, Rev. Father Francis H. Gavisk, member of the Board of State Charities, Indianapolis; vice-presidents, James F. Jackson, Cleveland; Dr. James T. Gilmour, Toronto; Miss Minnie F. Low, Chicago; general secretary and treasurer, William T. Cross, Chicago.

BULLETIN EXCERPTS.

Bulletin, BERKS.

THE JUNE MEETING belongs to the members not living in Reading, and we expect them to make the most of it and use it for the report of cases, the presentation of papers and the discussion of any topic that may be of interest to them. The program was arranged as noted, simply to start the ball rolling hoping in that way to open the way for every member from the country districts to have his say. If you have seen any interesting case during the past winter's work (and every one of you have seen many), or if you have any case that puzzles you, bring it to the meeting or tell us about it and let's have an informal talk about things. This is an invitation and demand on each one of you individually to be present and to bring something along for the rest of us. We expect to have a rousing meeting, so, Mr. Country Member, show us what you can do.

Bulletin, Crawford.

Committee Reports. Would it not be possible each month to have a report, however brief from standing committees? The call for "reports of committees" is usually met by a calm and indifferent silence. Why is this? It is the one chance for the members to become familiar with the activity or inactivity of the society. If these committees felt the burden each month of bringing some word of their workings the field would be pretty thoroughly surveyed in order to find something to report which would be of profit to our organization. For instance: The Committee on Membership would be proud to report new members brought into the fold if they had the slightest idea that they were expected to really work. The Committee on Public Policy and Legislation would take a far greater interest in legislative matters once they were impressed that it was their duty "to be a lamp unto our feet." The Committee on Health and Public Instruction would find its obligations weighing more heavily if it realized that the society had a keen enough interest to call for and listen to a report of work accomplished. Then, too, the belated Necrology Committee would have a chance to struggle into existence, and to win an honorable place on the *Bulletin* and in a fitting manner pay proper tribute to deceased members.

We Desire to Commend the action of our two daily papers in excluding the advertisements of the self-styled specialists, who are at present sojourning in our city. The members of the society would do well to express their appreciation of this action to the newspapers.

Weekly Roster, Philadelphia.

Every man, woman and child would be in better health if they took *pure* olive oil regularly and often. It is of utmost value during motherhood, because it offsets the drag upon the reserve forces, *building* tissues, *strengthening* the nerves and *relieving* constipation, keeping the intestines clean and healthy. (From an advertisement.)

Bulletin, Westmoreland.

Fighting the Nostrums.

The following editorial appears in a recent issue of *The National Labor Tribune*. The McKennan Drug Company deserves much credit for the lead they have taken in regard to patent medicines.

"The day of the 'patent medicine' is fast drawing to a close. Interviews with prominent druggists in Western Pennsylvania and reports from other states go to show that these men are not in sympathy with the efforts of the manufacturers of the thousand and one nostrums and fakes to swindle the public.

"For some time past, a great many of these druggists have been giving serious thought to the matter of discontinuing the sale of such goods. They have been forced to carry the stuff simply because the people demand it. These men for the most part feel that they are parties to a base swindle every time they sell one of these nostrums over their counter. In many instances, in order to discourage the trade in these goods, the druggist keeps all this dope out of sight of the customer and makes no attempt to advertise or sell it, while in other stores prominent signs are displayed stating that 'If You Are Sick, Consult a Doctor—We Sell Patent Medicines But Do Not Recommend Them.'

"But it remained for one Pittsburgh druggist to take the lead in a manner never before recorded. Last week the McKennan Drug Company, having a modern store in the Jenkins Arcade, Pittsburgh, threw out every bottle and box of patent medicine in the store, Mr. Wolf announcing that he was through with that line of dope. No longer will the patrons of the McKennan Drug Company be able to spend their money for worthless 'cures.' No commendation is too high for a business firm that will voluntarily take such steps to protect its customers from fraud. This firm heads the honor roll and it is the hope of the *Tribune* that other druggists will adopt the policy of these modern business men."

(Doctor, will you please hand the above to your druggist to read. He too should help to fight the nostrums. Too many of the so-called drug stores are department stores instead of the good old Apothecary Shops.—Ed. of *The Bulletin.*)

COMMUNICATION.

THE MEDICAL DEFENSE FUND.

Waymart, May 22, 1915.

C. L. Stevens, M.D., Secretary,
Medical Society of the State of Pennsylvania,
Athens, Pennsylvania.

Dear Doctor Stevens: At the meeting of the Wayne County Medical Society on last Thursday the enclosed copy of a letter from Dr. Tillman was read. No action was taken except to acknowledge the receipt of Dr. Tillman's letter and defer action until our meeting in July. The Wayne County Medical Society, one and all, refused to have anything to do with this matter until it was referred to you, to ask if the Northampton County Medical Society plan is approved by you and if the proposed plan is necessary in addition to the fees already paid by us.

Kindly enlighten me upon this matter, as I wish again to present Dr. Tillman's letter and your opinion at the July meeting. Hoping to hear from you at your convenience, I am,

Sincerely and fraternally yours,
George W. McCafferty, Jr., Sec. and Treas.

Athens, Pa., June 11, 1915.

Dr. George W. McCafferty, Secretary,
Wayne County Medical Society,
Waymart, Pa.

Dear Doctor: Yours of May 22d was duly received. Several letters from secretaries and others, asking my views on the plan proposed by Northampton County, have not been answered because I have not wished to attempt to influence the several societies in their action on this matter. Your letter, however, coming as an official one, deserves a candid answer.

The Medical Defense Fund was established in 1905 and for five years only ten cents per member was set aside each year; then the amount was increased to twenty-five cents, and this year for the first time the amount set aside is fifty cents per member. The last fiscal year of the society was the first year in which we spent more than the amount set aside during the year. We had on hand, September 5, 1914, $3135.07. The amount set aside for this year, including interest, will be about $3335.00. We have spent $2860.40 during the past nine months, including expense of our first appeal to the Supreme Court. At this rate it would appear that the fifty cents per year is hardly sufficient for our needs.

The proposed payment of $10.00 at one time would undoubtedly secure a fund sufficiently large to tide us over any emergency if we are not to pay judgments, and it rests with our members to say whether they would rather pay this at once and in a lump sum, or whether it would be easier for them to stand, if necessary, a slight increase in the amount annually set aside for the fund. The several societies will be the best judges as to whether their members as a whole will pay the proposed $10.00 at one time. The county and the state societies should be slow to take any action, unless it be imperative, that might cause a falling off of membership. An annual per capita assessment of $2.50 would allow the state society to set aside seventy-five cents per member for the Medical Defense Fund. Might not this method produce less friction than the establishment of a permanent fund of $65,000, and might it not be less likely to exert an unfavorable influence upon lawyers and jurymen?

Now as to the proposition to "pay any indemnity which may be awarded up to $10,000." Many who have carefully considered that matter believe that it would not be advisable for any medical society to pay judgments, largely for the reason that when the jurors learn that a society and not the local defendant is to pay the judgment they might be inclined to allow their sympathy for the local plaintiff to influence their verdict.

The Northampton County committee answering this objection say (See page 3 of its pamphlet): "We can not agree with the objection inasmuch as our plan does not contemplate any jury findings at all. Indeed we propose to contest every case to victory or the court of last resort." The difficulty with this proposition, however, is that if the plaintiff and his witnesses swear to enough so that the court is justified in submitting the case to the jury on questions of disputed facts, and the court makes no serious error in the admission or rejection of evidence, or in the charge to the jury, then it is only in rare instances that the appellate courts will reverse the court below, and in all such cases the verdict would stand no matter how much of a subsequent contest should be made. Under the present plan the state society stands just as ready to carry any case to the court of last resort, if there are any prospects at all of a favorable result, as it would be if it were obligated to pay such judgments as might be recovered.

Twenty-one states now have a Medical Defense Fund, but not one of them provides for the payment of any judgment against a defendant.

It may not be out of place right here to make some observations regarding protective companies, though the matter is foreign to the Northampton plan. There are several reliable casualty and protective companies, but probably the best of them do not give complete and unqualified protection, and their policies costing from fifteen to thirty dollars a year are not worth as much to the average physician and surgeon in the way of protection as membership in our state society.

If any member wishes to be insured for the payment of a possible verdict against him, it may be well for him to carry a policy in a good company paying such judgments. It is only fair, however, to remind him that, if we are to judge from experiences in these cases during the past few years, he will receive little assistance from such company in defending his suit after he calls upon the state society for defense. Some of these companies evidently do not feel that they are assuming much risk so long as their policy holders are members in good standing in our state society. There has been a friendly feeling between the officers and certain companies and it has been our common interest to work together. Though several of our members whom we have had to defend in suits for alleged malpractice have carried indemnity insurance, I do not recall a single case where it has cost our society any less than it would if the member had not carried such insurance. Not a single judgment has thus far been found against one of our members defended by the state society, and the only case that has been appealed was one where our member carried a casualty insurance. In this case the doctor called upon the casualty company for defense before calling upon the state society, and the company in a half-hearted way began looking after the case. It took no part, however, in the actual trial of the case and was not even represented at the argument on the appeal before the Supreme Court last month.

In another case two physicians were separately sued for alleged malpractice in the treatment of a certain individual. One was a member of our society and the other was not. The one who was not a member held a policy in one of the best of our protective companies. It so happens that the state society and the protective company employ the same legal firm in that particular county. Both cases were on the same court calendar, and the case against our member was called first. The trial lasted three days and resulted in a verdict for the defendant physician. The case against the other physician was not called, and as the cases are identical it is not at all likely that the case against the other physician will be called. The lawyer charged the society just the same as he would have charged if he had not been defending, to all intents and purposes, the two separate suits. Our councilor objected to the bill, claiming that the company should pay a portion of it, but we had to pay the whole bill.

The working out of our Medical Defense Fund has been in the nature of an experiment, and the councilors have tried each year to profit by the experience of previous years. Probably not one of the councilors is perfectly satisfied with our present plan. It must be remembered, however, that the councilors as individuals and as a body are probably better qualified for revising our present plan than are any of our members who have not had equal experience in this work. Some of the regulations governing the Medical Defense Fund may appear unnecessarily severe and restrictive. They have not been adopted, however, without careful consideration. It may be mentioned that one member whom the society was defending charged for serving of subpoenas, which he himself had served without any expense of time or money. Another wrote the councilor in charge that he was going south for the winter and would leave the entire management of the trial in the hands of the councilor living nearly one hundred miles away. One member subpoenaed an unnecessarily large number of witnesses, both lay and medical, causing the society unnecessary expense.

When a member who has served his patient to the best of his ability is hailed into court as having neglected or improperly treated the patient, it is not unnatural that he should become unduly annoyed, sensitive and unfitted for properly managing his defense, even as he might be unfitted for treating a member of his own family seriously sick. The defendant physician, however, is the one who must bear much of the brunt of the defense and pay any judgment finally awarded, and for this reason he has a right to a part in selecting his attorney and in conducting his defense. All these factors must be taken into consideration when changing or revising the rules.

It must be remembered that the writer is not authorized to speak for the Council, nor has he consulted the same in the preparation of this letter. It seems desirable, however, that some of the facts here brought out should be placed before the members of the county societies that are considering proposed changes to our medical defense plan.

Cordially yours,
C. L. Stevens.

REVIEWS.

A MANUAL OF OTOLOGY. By Gorham Bacon, A. M., M.D., Professor of Otology in the College of Physicians and Surgeons, Columbia University, New York. New (6th) edition, thoroughly revised. 12mo, 536 pages, with 164 engravings and 12 plates. Cloth, $2.25, net. Philadelphia: Lea and Febiger.

This is an excellent book, for students particularly. It is written in a concise yet comprehensive manner and is certainly a safe and sound book to follow. It is not elaborate and does not go too deeply into detail for one who wishes to get a good general knowledge of diseases of the ear and their care. N. S. W.

DIAGNOSIS IN THE OFFICE AND AT THE BEDSIDE. By Hobart Amory Hare, M.D., B. Sc., Jefferson Medical College, Philadelphia. Seventh edition, thoroughly revised. With 164 engravings and 10 plates. Philadelphia: Lea and Febiger. Price $4.00.

"In the diagnosis of a given disease," says the author, "it is essential that the physician rest his opinion, not upon one or two symptoms, but upon a series of symptoms which, when put together, give him a complete, or nearly a complete, picture of the malady. It is as futile for a physician to attempt to base a diagnosis upon a single symptom as for an architect to attempt to determine the appearance of a building by seeing one of the stones which has been removed from its walls."

The book is written on the plan which is actually followed in practice; namely, the upbuilding of a diagnosis by the grouping of symptoms. The author has omitted all consideration of laboratory methods in this work because, to use his own words, "it is now so highly developed that it requires special volumes for its description," and "there are several excellent books of this character." L. F. P.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF LABORATORY METHODS. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine in the College of Physicians and Surgeons, Baltimore. Eighth edition, enlarged and thoroughly revised. Octavo, 809 pages, with 185 engravings and 25 plates. Cloth, $5.00 net. Philadelphia: Lea and Febiger.

This work which since its first appearance has been the best book in the English language on clinical diagnosis from the laboratory standpoint, now appears in the eighth edition, enlarged and thoroughly revised. It is divided into two main parts, the first and larger part giving all the approved laboratory diagnostic methods; the second, or clinical part exhibiting under alphabetic headings the laboratory findings which establish a diagnosis of the various diseases.

The work will satisfy the laboratory instructor and the medical student, and will prove of practical value to the physician who has awakened to the fact that in the intelligent care of the sick, laboratory methods must accompany bedside observations. L. F. P.

EIGHTEEN THOUSAND WORDS OFTEN MISPRONOUNCED. A Carefully Revised, Greatly Enlarged, and Entirely Rewritten Edition of "12,000 Words Often Mispronounced." A Complete Handbook of Difficulties in English Pronunciation, Including an Unusually Large Number of Proper Names and Words and Phrases from Foreign Languages. By William Henry P. Phyfe, Author of "The School Pronouncer," "How Should I Pronounce," "5000 Words Often Misspelled," etc. 125th thousand. New York: G. P. Putnam's Sons. Price $1.50 net.

This little volume contains 18,000 words alphabetically arranged, and is of a size that can conveniently lie on the corner of a desk or library table available for immediate and easy reference. It is based upon Webster's New International, the Century, the Standard, Worcester's, the Oxford English, the Encyclopedic, and Stormonth's Dictionaries, and its object is mainly to indicate the correct pronunciations of words often mispronounced. A chapter is given furnishing a brief survey of the sounds, either actually occurring in English or adopted into it from foreign languages, and throughout the book, in their appropriate places, occur remarks concerning sounds and pronunciation. B.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences, edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; One time Clinical Professor of Diseases of Children in the University of Pennsylvania; Member of the Association of American Physicians, etc. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia; Ophthalmologist to the Frederick Douglass Memorial Hospital; Instructor in Ophthalmology, Philadelphia Polyclinic Hospital and College for Graduates in Medicine. Philadelphia and New York: Lea and Febiger. $6.00 per year, four quarterly numbers.

Volume XVI., 1914, No. 1, March: Surgery of the Head and Neck by Charles H. Frazier; Surgery of the Thorax, Excluding Breast, by George P. Müller; Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia and Influenza, by John Ruhräh; Diseases of Children, by Floyd M. Crandall; Rhinology and Laryngology, by George B. Wood; Otology, by Arthur B. Duel.

No. 2, June: Otology, by William B. Coley; Surgery of the Abdomen, Exclusive of Hernia, by John C. A. Gerster; Gynecology by John G. Clark; Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Thyroid Gland, Spleen, Nutrition, and the Lymphatic System, by Alfred Stengel; Ophthalmology, by Edward Jackson.

No. 3, September: Diseases of the Thorax and Its Viscera, Including the Heart, Lungs and Blood Vessels, by William Ewart; Dermatology and Syphilis, by William S. Gottheil; Obstetrics, by Edward P. Davis; Diseases of the Nervous System, by William G. Spiller.

No. 4, December: Diseases of the Digestive Tract and Allied Organs, Edward H. Goodman; Diseases of the Kidneys, John Rose Bradford; Genitourinary Diseases, Charles W. Bonney; Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations and Tumors, Joseph C.

Bloodgood; Practical Therapeutic Referendum, H. R. M. Landis.

Volume XVII., 1915, No. 1, March: Surgery of the Head and Neck by Charles H. Frazier; Surgery of the Thorax, Excluding Diseases of the Breast, by George P. Müller; Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia, and Influenza, by John Ruhräh; Diseases of Children, by Floyd M. Crandall; Rhinology and Laryngology, by George B. Wood; Otology, by Truman L. Saunders.

No. 2, June: Hernia, by William B. Coley; Surgery of the Abdomen, Exclusive of Hernia, by John C. A. Gerster; Gynecology, by John G. Clark; Diseases of the Blood; Diathetic and Metabolic Diseases; Diseases of the Thyroid Gland, Spleen, Nutrition, and the Lymphatic System, by Alfred Stengel; Ophthalmology, by Edward Jackson.

The standing of the men assigned to the various topics is sufficient guarantee of the interest and value of these books which, including index, contain from 382 to 460 pages each. The collaborators study the literature of medicine and surgery thoroughly and well, and the reader is given the benefit of their personal experience and reading. One can very well adopt, especially the busy man, this method of keeping up with the literature of the day, as in the course of the year the entire subject of medicine and its specialties are covered. L.F.P.

BOOKS RECEIVED.

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

FEVER, ITS THERMOTAXIS AND METABOLISM. By Isaac Ott, A.M., M.D., Professor of Physiology, Medico-Chirurgical College, Philadelphia; Member of American Physiological Society; ex-President of American Neurological Association, etc. 166 pages, 14 illustrations. New York: Paul B. Hoeber, 67-69 East 59th St. Cloth, $1.50 net.

FIELD HOSPITAL AND FLYING COLUMN. Being the Journal of an English Nursing Sister in Belgium and Russia. By Violetta Thurstan. London and New York: G. P. Putnam's Sons, 1915. Price $1.00.

MOTHERCRAFT. By Sarah Comstock. Illustrated. New York: Hearst's International Library Co. Price $1.00.

CHRISTIAN SCIENCE UNDER THE SEARCHLIGHT. By Rev. N. B. Cooksey, Nashville, Tenn. Publishing House of the M. E. Church, South: Smith and Lamar, Agents. Price fifty cents.

SOCIETIES.

PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting of March 2, Dr. George M. Coates in the chair.

The Technic of Tonsillo-adenectomy and Control of the Hemorrhage. Dr. C. F. Adams of Trenton, N. J.: The method of removing faucial tonsils has undergone numerous changes since the invention of the tonsillotome. As the operators became more expert dissection with scissors was added and the wire snare, hot or cold, displaced the tonsillotome. He finds the snare no more necessary than the tonsillotome or the guillotine.

The method is simple and requires less time than the snare. Patient is placed on left side, head two or three inches lower than the body; mouth is held open with a Jansen gag; tonsil is grasped with a Bruening's septum forceps, drawing it well out from the pillars and depressing the tongue with blades; at the same time a vertical incision is made through mucous membrane at anterior margin of capsule with Cryer's periosteal elevator. Dissection is continued and tonsil freed from pillars. If tonsillar attachment at base is too firm to yield readily to the dissector, it is severed with a long-handled bistoury.

The pharyngeal tonsil or adenoids are removed by a Barnhill curet. The posterior nares are curetted through the nose with a Kyle ring curet, the inferior turbinates broken with a Sinexon nasal dilator. A five per cent. tincture of iodin is applied to the wounded surface. Careful dissection of the mucous membrane is important, as the annoyance of dry throat after operation is not due to the loss of tonsil but mucous membrane and the lymphatics attached to it.

Carcinoma of the Tonsil. Dr. William Penn Vail reported four cases occurring in Philadelphia within the past six months. Two were in females and two in males, in none of the cases was there any family history of malignancy. Three were certainly primary (and probably also the fourth) in the tonsil. The age of patients varied between forty-five and sixty-seven years. Duration of trouble before entry in hospital varied from four months to two years.

Only a small amount of adenitis was present in each of the four cases. The only suggestions as to etiology were that both the males were excessively addicted to the use of alcoholics and pipe smoking. All four patients had very poorly cared for and poorly preserved teeth. Two cases were considered inoperable and patients were given Colet's fluid without benefit. Two were operated upon, one by external removal of tonsil and surrounding structures (died within five days from pneumonia) and the other by removal of affected tonsil (died after seventy-five days from hemorrhage from recurrent growth). X-ray applied to the recurrent growth gave no relief, either to pain or to lessening the rapidity of recurrence.

Conclusions: Importance of early diagnosis of enlarged tonsils in adults, if necessary by excising a portion for microscopic study. If malignancy is found, early and extensive removal is the only safe course to pursue.

Dr. P. Samuel Stout: X-ray does not penetrate from the outside. Ideal treatment is operation and then liberal use of radium; ten to twenty thousand dollars worth of radium must be used. Recently we had it used in two cases of epithelioma. We begin to atrophy at age of forty and then carcinoma of tonsil is rare. Traumatism must in a measure be ruled out, for traumatism is always taking place when we eat.

Dr. Wm. R. Butt: I have seen five cases of carcinoma of tonsil; two of the patients were operated on radically; both went on to death, similar to those without operation, but with added discomfort of operation.

Dr. A. S. Kaufman: Some time ago, I saw a case of carcinoma of the tonsil, which seemed to be confined to the tonsil; no palpable glands. The patient went to a chiropractor, and thought he had been somewhat relieved; the next thing I heard of him, he was in the surgical ward of Jefferson, with an inoperable case, and died in that institution.

Dr. Adams: We say we have never had a serious hemorrhage and still we not infrequently hear of loss of life by hemorrhage. We often do not realize how much blood is lost. The tonsil and capsule are to be taken out and nothing else. At one time we used a punch and left capsule, afterward found it necessary to remove capsule to get results. Capsule thickens and is often source of annoyance. When tonsil is diseased it is not one part diseased but usually all diseased.

Dr. Vail: X-ray treatment was given first from outside then with special tube through open mouth but the patient gaged and it was unsatisfactory.

Is a Modified Radical, or Heath Operation, a Justifiable Procedure? Dr. A. Spencer Kaufman: A modified radical, meato-tympanic, or Heath operation, is very much abused, both in its application and by its critics. Users often fail to follow indications and properly select cases for the particular operation indicated.

The operation consists in performing a simple mastoid or Schwartze operation, and removing of the posterior bony wall of canal to within a quarter inch of annulus tympanicus, dividing cartilaginous canal into flaps, closing posterior wound entirely. Contents of middle ear are not disturbed and all postoperative treatment is carried out through the external auditory meatus. It has for its object cure of suppuration, repair of drum membrane, restoration of hearing. There is a certain class of cases to which this operation is adapted, not to supplant either radical or simple but to take care of a group of cases in which it is indicated. During the performance of a simple mastoid operation, the bony canal is occasionally found to be very necrotic. To remove all the bone would subject the patient to the danger of a collapsed canal, and to do a radical under these circumstances would result in loss of hearing, whereas, if the tympanic ring is left intact and the contents of middle ear undisturbed, the result on hearing will be the same as a simple operation. We find chronic cases in which disease is confined to antrum and mastoid, and ossicles in place and some membrane remaining. The membrane in these cases, after a Heath operation, will reform and the hearing be much improved. The typical case for a Heath operation is this: Patient complains of a discharge having continued for some time; examination reveals a large perforation of tympanic membrane and the ossicles plainly visible; *x*-ray shows either necrosis or ulceration of the mastoid with necrosis of the antrum.

Conclusions: It is a justifiable operation in (1) chronic mastoiditis, where there is only partial destruction of the tympanic membrane and the ossicles are in position; (2) in cases of acute mastoiditis, with an unusual amount of destruction of the tympanic membrane and loss of hearing; (3) in cases of acute mastoiditis with extensive necrosis of the bony portion of the external auditory canal.

Dr. W. R. Butt: Theoretically the Heath operation is advised for esthetic effect. This operation accomplishes nothing more than simple operation, but there is one difference and possible advantage in draining through posterior canal thus avoiding open wound behind for several weeks.

Dr. Kaufman: I can not account for the great loss of hearing, unless it was due to an exudate, which was usually visible on the mucous membrane of the tympanic cavity. The hearing began to improve shortly after operation. He has been back at his place of employment for seventeen months, and has used an ear phone only four times, when he first returned. It is only a question of time when both the Heath and radical will be rare operations, as the simple, done early enough, avoids the necessity for either of these.

The Use of Stimulant in the Nose. Dr. Douglas Macfarlan: We are often found using remedies in our nose and throat work, in an habitual or subconscious way. With the older men it may be from familiarity but with the younger men it comes from a less complimentary habit. The bacteriologist does not depend on one preservative, one fixative, one antiseptic, nor on one stain. Why does he have a list of phenols, alcohols, mercurials, and coal tars? How is it in our business? We find the whole profession using argyrol empirically (not that we are universally disagreed as to its value, for it is popular), but how many of us are using it without any particular knowledge of it and without an endeavor to learn its values and limitations. It is this very empiricism that with the laity has made fat the proprietary man; and we can see an analogy between it and this bad habit of ours.

A study of the physiological effects of drugs whether used internally or locally will be of the greatest comfort to us when we prescribe. We have a great variety of remedies to select from in the treatment of most complaints and there are differences and shades of difference between them that will direct their particular selection in individual cases with correspondingly neater results.

With the atrophic cases, results with the stimulants are often remarkable, for the effects produced are almost identically opposite the manifestations of the disease. The irritation exercises and increases the secretory powers of the mucous cells that remain; the nose becomes moister, the throat in consequence less irritated; crusts come away more easily and eventually disappear, with them goes the ozena, and often will be reduced to some degree the anosmia that may have developed. The mucous membrane from its dead white atrophic appearance takes on a pinker and fresher color evincing a vascular return. These are the results that are obtained with the stimulants when they are used in strong enough solutions; the tendency is toward timidity with them because the patient complains of the free rhinorrhea, lacrymation, stinging and burning caused. But the milder solutions that do not produce these effects do not give results. I have been in the habit of using a one per cent. solution of double iodid of mercury as an application to the nose on first treatment, and from the reaction to it judging the strength of spray that I give the patient. The spray is used four to six times a day and later less often as the condition improves. As a rule the atrophic cases are more insensitive than normal, so that sprays of one per cent. double iodid or one half to one per cent. formaldehyd can be given. Reaction is essential. Bleeding may be set up and naturally indicates that the treatment is too strong; the solution should be diluted but not abandoned. Incidently, I have lately tried emetin (one half per cent. solution) at the suggestion of Dr. Ivy, who used it with success. It is another irritant, and acted with just such effect as the others on an old antrum infection of some years' standing.

In conclusion, I would like to make a plea for the careful observation of our remedies, seeking the physiological effects of our drugs and applying them to correct the pathologic conditions we meet. It would be well to avoid if possible getting hobbies on drugs; study them as entities and not at first in relation to the conditions for which we use them, and select them by comparisons.

Dr. Ross Hall Skillern: We have followed blindly and slavishly our forebears in the empirical use of certain drugs and formulas. Take for example the old M.-C.-A. mixture. We always conclude our treatments by spraying this into the nose and throat, and to what purpose? Argyrol is another remedy which after most exhaustive trials in all strengths has only proven a disappointment, at least as far as I am concerned. Warm sterile normal saline solution is after all the best general solution for the diseased nose. We must recollect that the infected sinus fairly swarms with pathogenic microörganisms, while in the normal state it is sterile. In the majority of acute cases the mere flushing out with the saline solution is all that is required to bring about a complete cure. It is doubtful if the addition of carbolic acid, sulphate of zinc, etc., will hasten the resolution. In chronic conditions it depends largely upon the pathological changes which the mucosa has undergone, how much benefit will be derived from any irrigation. There is no known germicide which can be effectively used in the nose without a severe reaction and even superficial necrosis of the epithelium. Under these circumstances the use of a strong antiseptic solution is contraindicated and the use of a weak one futile.

Dr. Macfarlan: Dr. Alexander asks the amount of reaction, and the rapidity in which results are noted. The degree of reaction depends upon the strength of the solution used, to a slight extent upon the amount used, but more particularly upon the irritability of the patient. The latter is variable and each case is a law unto itself irrespective often of the duration of the case (speaking of atrophy). Advanced cases may show marked and incipient cases slight reaction to the same strength solution, and *vice versa*. Results are always forthcoming within a week or two and often more quickly; and here too the old case may often show improvement sooner than the recent one.

Dr. Skillern speaks of sterilization of the nose and the absurdity of its purpose. My object is not to sterilize but to stimulate. It happens that the double iodid solution is a good antiseptic just as formaldehyd, and I believe this quality of possible benefit in a purulent insensitive nose.

The gross carelessness of the younger men in the thoughtless use of remedies is seen in the giving of oily sprays or solutions containing glycerin, to cases with dryness, further dehydrating them and making them dryer.

Dr. Allen J. Smith has stimulated the use of emetin in pyorrhea by having found the ameba in the pus, also in the tonsil crypts; I looked for the ameba in the pus from this antrum but had already used the emetin the day before. They are supposed to disappear from the pus very rapidly after its use. I had washed and freely drained in this case for weeks in the past, and this time on the instillation of emetin three times the case cleared up. This seems remarkable, for all this happened in less than two weeks' time. I ascribe it to the irritant action of the drug, for even in one half per cent. solution, on some of it getting into the pharynx, it set up an acute inflammation of a few days' duration.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of February 1, Dr. S. Lewis Ziegler, Chairman.

Paralysis of Intra- and Extra-Ocular Muscles Following Asphyxia at Childbirth. Dr. William Campbell Posey presented a child six months old with paralysis of both external rectus muscles. Condition was attributed to asphyxia at birth, child being born with the cord wrapped about its neck. The child apparently sees, for it will follow the movements of the hand. Ophthalmoscopically, there is nothing abnormal except undue pallor of both optic nerves. There is pupillary inequality, the pupil of right eye being the larger one day, and that of left, the following day. Once, during examination, the child's face became cyanotic, and continued in this condition for several minutes. The mother states that this may occur several times during the day. Dr. Spiller, who studied the case, thought that the asphyxiation might have caused cerebral hemorrhage, but that it had more likely led to cellular degeneration. The absence of spasticity and paralysis shows that the cerebral cortex is not generally affected. Patient is taking syrup of hydriotic acid.

Foreign Body in the Lens. Dr. Posey exhibited a young man from whom he had recently removed a fragment of steel that had been embedded in the capsule of the lens, with the result that normal vision was secured. The points of interest in the case were the absence of all inflammatory or reactive signs following the entrance of the foreign body, through the limbus, into the eye; the glistening appearance of the foreign body, as it lay in the pupil, on the anterior capsule; and the slight haze that remained in the capsule after removal of the fragment with the magnet.

Foreign Body in the Vitreous. Dr. Posey showed a second man from whose eye he had removed a foreign body. This was a fragment of steel, taken from the vitreous on the previous day, by means of the Haab magnet. He had chosen this instrument in preference to weaker magnets on account of the small size of the foreign body and position of the wound, which was a jagged one of the limbus; and because the accident had happened but a few hours previously. An incision through the sclera nearest to position of the foreign body, as shown by the *x*-ray, would have produced greater traumatism, and could not have been performed without etherization of the patient.

Dr. S. D. Risley, in discussing, congratulated Dr. Posey on the ingenious method that he had adopted, and upon his success in removing the foreign body from so critical a position on the anterior capsule. In replying to Dr. Posey's inquiry as to the choice of the powerful magnet, instead of a Sweet or Parker, Dr. Risley said that he thought that choice should depend not only on location of the foreign body, but also on its size. If the mass were so located that there would be danger of entanglement of the iris or the ciliary body, and if it were relatively large, he thought that it would be prudent to use lower powered magnets. He had, in one instance, when the foreign body weighed two and a half grains, seen it projected violently from the eye, fastening itself upon the tip of the Haab magnet, ten inches distant; and carrying with it a large amount of the iris, through the wound of entrance, near the corneal limbus. If the smaller magnet should not prove, on trial, to be sufficiently powerful, it would, Dr. Risley said, always be possible to resort to the more powerful instrument.

Dr. Burton Chance said that he thought it quite surprising to note the behavior of the crystalline lens in its reaction to injuries, particularly when there has been retention of a foreign body in the lens substance. In many cases, he said, reaction has been noted as being but slight; whereas, that which sometimes follows a minute incision, in successful operations, is often disastrous. He, too, has observed the singular spending of the force of flying foreign bodies after they have perforated the cornea or sclera, so that they merely become lodged in the superficial layers of the lens. Dr. Risley's recital of a case of perforation by a sliver from a glazed brick recalled to Dr. Chance's memory a case of his own, which had occurred in his early days, while serving during the absence of a much older confrere. A sliver of japan, struck off from the painted hinge of a screen door, had penetrated a man's eye. The spicule had perforated the center of the cornea and, without wounding the iris, had become embedded in the anterior pole of the lens, and was projecting from the surface of the lens well into the anterior chamber. The patient was seen first, two days after the accident. The reaction had amounted only to a mere annoyance; and, as Dr. Chance was a stranger to him, the patient refused to allow any treatment designed for the extraction of the foreign body. He reported again on the seventh day after the accident, with scarcely any symptoms; the spicule continued embedded, and, except for a tiny zone about the spicule, the lens was not clouded. The man refused to return for further treatment, and has not been heard of since. Dr. Chance assumes that such wounds of the capsule are clean and smooth, and allow the foreign body to become firmly wedged, thus hindering the access of the aqueous to the lens substance, thereby preventing disintegration, with the consequent chemical and mechanical irritation of the uveal tissues.

O'Connor Operation. Dr. Posey exhibited two children upon whom he had performed the O'Connor advancement operation the week before. One child, aged eight years, had had a convergent squint in the left eye, of 50°. The advancement was aided by tenotomy of the internus of the same eye. Only 20° of improvement was noted. Dr. Posey said that it was but fair to the operation to state that he had departed somewhat from the original procedure; inasmuch as he had included the entire muscle between the catgut loops, instead of the two strands of muscle, as advocated by the author. The muscle strands had buckled up satisfactorily, however; and the immediate effect of the operation had been good. So far as he could judge from the six cases that he had operated upon, Dr. Posey thought that the traumatism produced by the operation was greater, and the advancing effect less, than could be obtained from the single-stitch advancement operation, which he usually practices.

Retrobulbar Neuritis. Dr. Posey showed a middle-aged man with retrobulbar optic neuritis from diabetes. Alcohol and tobacco had been used sparingly by the patient. Rapid improvement followed antidiabetic treatment, abstinence from alcohol and tobacco, the use of sweat-baths, and the administration of strychnin.

A Case of Neuroparalytic Keratitis. Dr. William Zentmayer stated that the patient, A. B., a tailor, was forty-eight years of age. His left eye had become inflamed about October 20, 1914. At first, there was a small red spot on the inner surface of the lower lid of the left eye, accompanied with a sensation as of a foreign body. Redness and lacrimation had persisted. The patient had been under constant treatment before coming to Wills Hospital on January 10, 1915. The upper central two thirds of the cornea was without epithelium. There was moderate ciliary injection and the cornea and conjunctiva were anesthetic. He was treated as an ambulatory case, while awaiting vacancy in the ward. A protective bandage was worn constantly, and holocain and atropin were used several times daily. On January 19, the cornea became infected and hypopyon formed. He was then admitted to the hospital. Smears were negative; cultures showed streptococci. The entire cornea was destroyed in forty-eight hours. A neurologic examination made by Dr. Weisenburg, showed nothing more than a small area of anesthesia over the distribution of the superior orbital nerve on the left side. The patient had had for at least thirty years, a general tremor of the head and arms. A radiograph of the skull showed no intraorbital or intracranial lesion. The sinuses were examined by Dr. Skillern and found normal. The Wassermann was negative, notwithstanding the fact that there was a history of chancroid about fifteen years previously. There had been no secondaries. The eye was enucleated.

Complete Ophthalmoplegia Externa. Dr. Risley presented for study and discussion a case that, on cursory examination, presented the usual features of a complete ophthalmoplegia externa. There was moderate exophthalmos. No considerable deviation of the balls was noted; but both were fixed, or nearly so, except for the ability to move them slighty downward. That the nearly stationary position of the eyes was not due to faulty innervation but to some impediment in the orbit, seemed probable from the fact that, in the first place, the irides reacted to light; and it was obvious that the patient was able to make unsuccessful efforts to move the eyes. When the eyelids were everted, a lipomatous mass projected at the retrotarsal fold, and was markedly increased in size by pressing the eyeballs backward. The condition of the eyes was, so far as could be learned, apparently congenital. Dr. Risley had not had the opportunity to make an exhaustive study, as the case had only an hour before been assigned to his service. That the lipomatous mass in the orbit, he remarked, was not a pathologic growth, but an anomaly, is suggested by the following: The condition was probably congenital; the girl, now aged seventeen, had been operated upon for hare-lip; and there had apparently been a cleft in the cheek on both sides, which had also been closed by operation. These anomalies of development led to the inquiry as to the probability of faulty development in the anterior segment of the skull, possibly in the orbital walls. There were no colobomata in the iris, choroid, or optic nerve, in either eye, the fundus in each being quite normal in appearance. Dr. Risley suggested that *x*-ray study might furnish additional evidence, and hoped to present the results of such study at a subsequent meeting of the society.

An Ethmoid Mucocele Involving the Orbit Treated with the Violet Ray. Dr. S. M. D. Marshall presented the following case: On April 2, 1914, William S., a negro aged thirty-eight years, a farmer by occupation, married, with no children, and giving a negative venereal history, presented himself for treatment. He complained of protrusion of the left eye; neuralgic pain on the left side of the head, especially in the region of the left eye; and double vision. He had first noticed the trouble about six months before; and it had grown steadily worse. Examination showed a marked proptosis of the left eye, and partial paralysis of the upper lid, as the result of which there was considerable conjunctival injection and chemosis. The action of all the external muscles was almost entirely gone, especially the superior rectus. Pain and tactile sense were very much diminished over the entire left side of the head and face, especially in the region of the left orbit. The cornea was clear, the iris apparently normal, the lens and vitreous clear, and the fundus apparently normal, except for slight pallor of the temporal half of the disc. The vision was 6/6 in the right eye; in the left, 6/9 pt. Diplopia was evident on moving an object (twenty inches from the eyes) three inches in any direction. The field of vision in the right eye was apparently normal for form, but that of the left showed a rather marked contraction on the nasal side. The blind spot was apparently normal, and no scotoma was found.

Examination of the nose showed that the upper portion of the nasal cavity on the left side was entirely occluded by a swollen middle turbinate. The patient gave a history of having had a nasopharyngeal catarrh for several years. A tentative diagnosis of ethmoidal mucocele involving the orbit was made. The nose was treated locally with cocain, adrenalin and albolene spray. Internally, sixty grains of aspirin was given him daily, to control the neuralgic pains. He was instructed to use hot fomentations three times a day, together with a boric-acid wash.

Vision remained the same on April 6; other symptoms were unchanged, except the neuralgia, which apparently had lessened materially. On April 11, it was noted that for the last few days there had been a slight mucopurulent discharge from the nose. The eye condition and the anesthesia remained the same. On April 22, it was suggested that the violet ray generated by our *x*-ray machine be tried through vacuum tubes in the nose, and directly over the eye. Three treatments were given, all other medication being stopped. The vision became normal in each eye, the proptosis, much less marked; and movements of the external muscles, greatly increased. The patient felt very much better, but said that he had a dragging pain on moving the eye quickly. The neuralgia had almost disappeared. By June 6, there was only slight proptosis. Consequently, the ocular movements had greatly increased. Sensation in the left side of the head and face had returned, except for a small area of anesthesia on the lower lid, and one on the upper lid. Vision in the right eye was 6/5 pt.; in the left, the same. The field of vision was apparently normal, but the temporal half of the disc remained pale.

Two months later, examination showed absolutely none of the symptoms of which he had complained on his first visit. The left eye seemed to be less prominent than the right, which was probably due to the contraction of the scar tissue in the orbit. The patient was discharged cured.

Dr. Marshall called attention to the fact that during the whole time that the patient was under observation, he had never lost a day's work. This, considering the time of year and the man's occupation, is rather remarkable. Dr. Marshall further stated that at the time the electrical treatment was started all medication except a mild nasal spray of camphor, menthol and albolene, was stopped. He was skeptical as to the outcome at that time, and could see nothing ahead but a radical operation, which would have meant to the patient the loss of at least four to eight weeks, not to mention the possibility of a more serious outcome. The speaker thought that the real trouble was an ethmoidal mucocele involving the orbit; and that, by increasing the drainage through the nose, and so stimulating the circulation in the tissues of the orbit, the mucocele was in part discharged, and in part absorbed. He believed that the patient had been cured by the violet ray, and recommended that in similar cases this should be used, a fair trial being given it before considering a radical operation.

Dr. Posey, in discussing, said that he had had no experience with *x*- or other rays in the treatment of the class of cases referred to. From the history, he thought that Dr. Marshall's case was one of orbital cellulitis, due to an acute inflammation of the sinus, rather than to mucocele. There was no evidence that the sinus had been blocked up, he said. Indeed, there was a nasal discharge. He referred to a similar case shown by Dr. Fisher before the society in 1913, and said that in that case the orbital cellulitis and the proptosis, which had been extreme, subsided under ordinary nasal treatment.

Errata: The discussion at the meeting of the Wills Hospital Ophthalmic Society held May 4, 1914, on "Cilia in the Anterior Chamber," should have been credited to Dr. Burton Chance, and not to Dr. Ziegler, as reported.

J. Milton Griscom, Secretary.

COUNTY SOCIETY REPORTS.

BUCKS—May.

The business meeting of the Bucks County Medical Society was held at Bristol, May 12, with forty-three physicians present, President Erdman in the chair.

Dr. G. Oram Ring, Philadelphia, delivered an interesting lecture on "Glaucoma, with a Consideration of Systemic Association," and likewise briefly considered the "Diagnosis and Treatment of Trachoma."

Dr. William L. Clark, Philadelphia, gave a lecture on "Desiccation Surgery." Dr. Clark illustrated his lecture with about fifty slides showing many cases of growths on various parts of the body, before treatment, and the same again, electrically treated; in many of the cases the growth was entirely obliterated, leaving the skin clear and in some instances unmarked.

During the banqueting hour, Dr. William L. Estes, South Bethlehem, councilor for Third District, expressed his appreciation of meeting with the society. He impressed upon the members the importance of organization, the value of the social side of the profession and the benefits derived from scientific gatherings of this character.

Anthony F. Myers, Reporter.

CHESTER—April, May.

The meeting of the Chester County Society was held April 20 at the Chester County Hospital, West Chester.

M. Butler Mendle, Esq., of West Chester read a paper on "The Legal Aspect of Insanity, with Especial Reference to Commitment." He told of the ancient laws during the time of Blackstone and defined in several ways the meaning of insanity, following this with the present meaning of insanity from a legal standpoint. In order to commit to insane hospital it is necessary for two physicians who have been practicing for five years to examine the patient separately and if they believe him insane he should be placed under restraint. They must swear before a duly qualified justice of the Commonwealth. The physician can not be any blood relation to the patient and commitment must follow within seven days after examination. If for pecuniary or selfish reasons the physician should commit a person who is not insane, he is guilty of a misdemeanor and liable to $500 fine or one year imprisonment or both, according to the discretion of the court.

Dr. Joseph P. Laird of Devon, read a paper on "The Relation of the Ductless Glands to Mental Development." He stated that the functions of the internal secretions were based on "theory." Little is known regarding thymus; it secretes excessive phosphorus and has some stimulating effect on the adrenals; it develops very little after puberty. The pituitary body stimulates the adrenals and acts in relation to the growth of the brain and nervous system. The adrenals increase blood pressure by contraction of peripheral vessels and also play a prominent part in metabolism.

The thyroid, we know little about except that if it is missing or undeveloped we have myxedema and cretinism, while, on the other hand, overgrowth is associated with exophthalmic goiter.

A paper written by Dr. F. M. Hollister of the Chester County Insane Hospital on "Early Diagnosis of Insanity," was read by Dr. Pleasants. He fully classified the different forms of insanity and then went into detail regarding the common forms found by the general practitioner, and laid especial stress upon the early diagnosis and commitment before the mind is too deficient to resume its normal condition. The papers were thoroughly discussed and many interesting facts brought out.

The Chester County Society held its annual outing and luncheon at Washington Inn, Valley Forge, May 18. A committee was present from Berks County Society to extend an invitation to hold a joint meeting with them at some convenient place, during the month of July, for scientific purposes and to become better acquainted. The chair appointed Drs. Laird, Pleasants and Roulon to represent Chester County. Resolutions on the death of the late Dr. James Eves of New London were read and adopted.

Dr. Joseph T. Rothrock of West Chester read a paper on "Then and Now," which was a general résumé of the practice of medicine during the past century, showing the changes and improvements which have taken place. He also gave some interesting incidents and experiences from his own practice during the past forty-six years.

A chicken and waffle luncheon was served on the porch of the old inn. The meeting was a highly enjoyable one, socially, scientifically and gastronomically. Visitors from adjoining counties who spoke were Drs. Bornemann, Brunner, Shoemaker and Runyeon of Berks County; Drs. Morton and Stiteler of Delaware County; Drs. Hubley, Whitcomb, Hartman, and Eisenberg from Montgomery County.

D. EDGAR HUTCHISON, Reporter.

CLEARFIELD—APRIL.

The Clearfield County Medical Society met April 14, with fourteen members present.

Dr. Lawrence Litchfield of Pittsburgh gave a lecture on "Diabetes." Glycosuria has been produced experimentally by injection of adrenalin, puncture of fourth ventricle, administration of phloridzin, producing lesions in the pancreas, and over feeding. In diabetes the system has lowered power of consumption of carbohydrates; the cells can not metabolize glucose. Acidosis is due to failure of organism to burn sugar, the acetone bodies rob the body of alkalies and thus lessen the alkalinity of the blood and tissues. The system tries to prevent this dealkalinization by forming ammonia in large amounts to neutralize the acids. The amount of ammonia in the urine is one of the most valuable tests of the degree of acidosis. Watch carefully for signs of acidosis, such as shortness of breath and drowsiness. The acid in the urine is not as important as the acid in the system; the amount of sugar in urine not as important as the amount of carbohydrates that can be taken without sugar appearing in urine.

Cases are classified according to tolerance, if they can take 100 grams of carbohydrate in twenty-four hours without sugar appearing in the urine they have 100 grams tolerance and there is little danger of acidosis if they have 40 grams tolerance.

The chief object of treatment is to nourish the patient and increase carbohydrate tolerance. Use no carbohydrate for several days; every four or five days use starvation treatment, giving tea, broths and bouillon; have green vegetable days; patient should eat spinach and should use butter washed in cold water to remove the butyric acid or butter made without salt and if butyric acid, is present patient should not eat the butter. The end result of oatmeal is acid the same as all cereals. The seven carbohydrates that have a basic end are potatoes, cantaloupes, apples, tomatoes, oranges, raisins and bananas. Potatoes and bananas most important because of nutritive value. When signs of acidosis appear give intravenously sodium bicarbonate four per cent. (to neutralize the acid), and ten to thirty per cent. glucose.

Give by mouth 5 grams sodium bicarbonate every half hour. Give magnesium carbonate as laxative. If arteriosclerosis is not present give adrenalin hypodermically to raise the blood pressure and because of its antitoxic effect. You may precipitate an acidosis if you put patient on a carbohydrate free diet all at once, gradually reduce carbohydrates to the point when sugar disappears from the urine. Let the patient know the seriousness of the disease but do not scare him to death, let him understand that present sacrifice is for future benefit. Forty-five per cent. of the protein metabolized is converted into sugar. Pyorrhea alveolaris is frequently found in diabetics.

"Infections of the Hand and Their Management" presented by Dr. J. S. Waterworth, was greatly enjoyed by those present because so much depends upon the thoroughness of the treatment of such cases which are frequent in our practice and have caused us to feel uneasy more than once.

G. B. YEANEY, Reporter.

DAUPHIN—APRIL.

At the meeting of the Dauphin County Medical Society, held April 6, Dr. Thomas McCrae, professor of medicine in the Jefferson Medical College, Philadelphia, gave a most interesting and instructive address on the "Dietetic Treatment of Diabetes Mellitus."

In this treatment he emphasized, first, the restriction of proteids; second, the importance of the green vegetable diet; third, period of fasting. In severe cases and, particularly where coma is imminent, first, the patient should be put at rest; second, fasting; third, whisky should be administered, three to five ounces daily. Plenty of water should be given and sodium bicarbonate administered. This should be continued until the sugar and acetone disappears from the urine, which may take from two to ten days. The sugar and acetone having disappeared, green vegetables may be given, two ounces at first and gradually increasing the amount. The whisky should be decreased. If at any time the sugar appears, renew the fasting for a day or so. Fat may then be added to the diet, followed by proteids in the form of eggs.

In the routine treatment of diabetes, he divides the seven days of the week into three periods: First, that in which a carbohydrate free diet is given; second, the vegetable days, plus eggs; and third, the fasting day. He arranges it so that three are allotted for the carbohydrate free diet, two days for vegetables and eggs, and the fasting day comes on Sunday when the patient can remain in bed. The next day following fasting day (Monday), carbohydrate free diet, to which is added a couple slices of bread.

He spoke of the difficulty in arranging meals for these patients and states that oat-meal serves as a very good article of food when they have reached a stage of some carbohydrate tolerance. A breakfast may consist of oat-meal, milk or eggs, bacon, butter. Some patients can take potatoes better than any other form of carbohydrate. Others consume bread better, while still others, milk. The reason that the proteids are restricted is because it has become a well-known fact that many patients are kept from obtaining a sugar free urine by the proteids which they are eating being transformed into sugar.

Nothing was mentioned about treatment of the condition by drugs or any other method,—laying the most stress on this new step in the treatment of the disease; namely; restriction of proteids and fasting. H. Hershey Farnsler, Reporter.

DELAWARE—April.

The Delaware County Society met at Chester Hospital, April 15, at 3:30 p.m.

Dr. Robt. Kilduffe, Jr., read a paper on "Urinalysis and the General Practitioner," showing that it is one of the most useful and at the same time neglected of diagnostic procedures. The history of diagnosis of pathological conditions by examination of the urine was related, showing that as early as 4000 B.C. the Babylonian physicians had noted changes in its color and composition. The Hindu physicians in their earliest records make frequent and lengthy reference to the examination and character of the urine, and under each of the twenty morbid conditions which constituted their pathology are grouped various urinary changes. They describe a "honey urine" which would attract ants (which fact they used as a test) thus evidencing a knowledge of diabetes, carbuncle and other skin affections. Various tests and their meaning (interpretation) for sugar and albumin were given in detail. The paper was much appreciated by all present and was the source of an earnest discussion. W. E. Egbert, Reporter.

ELK—April.

The Elk County Society met at Wilcox on the evening of April 8, with a fair attendance, and Dr. C. G. Wilson as acting president. A resolution was offered endorsing the Wilson Local Option Bill and passed without a single dissenting voice. The secretary was instructed to notify the members from this district of this action and ask their support. Dr. W. H. Bush of Emporium who was to read a paper on "Acute Nephritis in Infants," was unable to be present, but sent his paper. It was very interesting and called forth a discussion. S. G. Logan, Reporter.

FRANKLIN—May.

The Medical Society of Franklin County met, May 18, in the Courthouse, Chambersburg, President Kempter presiding and fourteen members present. The members of the society were invited to attend a week of postgraduate work at the Washington County Hospital, Hagerstown, Md., during the week of May 17, which was held under the auspices of the state society of Maryland, clinics being conducted by Drs. Austrian, Miller and Hamman of the Johns Hopkins Medical School.

Dr. S. D. Shull read a paper on the "Prescribing of Pharmaceutical Instead of Proprietary Preparations." He told of the methods used by the proprietors or firms pushing these preparations, using the physicians as advertising mediums, and urged that every physician should own the Pharmacopeia, the National Formulary and New and Nonofficial Remedies. He advised the medical man to study his cases and carefully work out his treatment rather than follow the direction of the proprietary medicine firms. This was discussed by other members.

Dr. F. G. Wright presented a case of myelogenous leukemia in a man aged about forty. The patient was examined and the enlarged spleen reaching far down in the abdomen was outlined and fully discussed.

Dr. Wright said that if these cases can be detected and diagnosed early much may be done for them. The chances are poor when they have existed for a year or two. He urges the use of benzol and free purgation.

A general discussion on, "Are We Justified in Using Immunizing Doses of Diphtheritic Antitoxin" was opened by Dr. A. Barr Snively. He urged that on account of the danger of anaphylaxis we are not justified in using these immunizing doses except where we have positive indications or where we are unable to use other means, and to know the cases fully before using the antitoxin for that purpose. Other members urged its use for this purpose, even in large and frequent doses where a positive condition exists. JOHN J. COFFMAN, Reporter.

HUNTINGDON—APRIL.

At the meeting of the Huntingdon County Society held April 8, a paper on Acute Articular Rheumatism was read by Dr. J. S. Herkness. Careful study of patient is necessary, and treatment should be directed toward patient instead of a diseased condition. In this way only can we secure the best results. Tonsillar infection is probably responsible for a large number of cases, hence it is advisable to remove all tonsils which show a diseased tendency. A thorough examination should be made of people who complain of general ill health, as oftentimes rheumatism is preceded by this one symptom.

Diagnosis should present no difficulties except in children. In them, the joints may be but slightly affected although there may be endo- and pericarditis existing. Always examine cases of erythema nodosum and erythema multiforme for rheumatic manifestations. In all cases, no matter how mild, the patient must be put to bed for at least one week after the subsidence of fever and if complications arise for a longer period. Motion can be prevented by padding of joints and the use of sandbag splints. Cleanliness is absolutely essential, sour-smelling sweat being rarely observed when patient is bathed. Diet should be liquid until fever abates. Water favors elimination.

Dr. Herkness gave a résumé of therapy by salicylic acid and by its compounds with successes and failures under their administration. He advised the study of other remedies in order not to get into a rut, and he disapproved the prescribing a remedy for rheumatism simply because rheumatism is the diagnosis. One should select the remedy according to the pathological condition and the symptoms present. Other remedies worthy of trial are cochicin aconite, bryonia, belladonna, rhus toxicodendron, cimicifuga, and spigelia.

Dr. H. C. Chisolm read a paper on "Appendicitis." J. M. KEICHLINE, JR., Reporter.

LANCASTER—MARCH, APRIL.

The March meeting of the Lancaster City and County Medical Society was held in Malta Temple with President Atlee in the chair and fifty-seven members present. Upon motion the reading of the January minutes were dispensed with.

Dr. D. E. Cary read a paper on "Synthetic Substitutes for Cocain." The paper gave a clear idea of the value of the various substitutes for cocain. Dr. W. D. Blankenship presented a paper on "The Symptoms and Treatment of the Habitual Use of Opium and Its Derivatives." Dr. Howard Witmer read a paper on the "Habitual Use of Coal Tar Derivatives and Benzine." Dr. T. C. Shooker read a paper on the "Use and Abuse of Cocain." The discussion was opened by Dr. S. W. Miller and was participated in by Drs. Appel, Hershey, Heller and Lehman.

The secretary reported the deaths of Drs. A. M. Kalbach, J. B. Lincoln and A. C. Treichler. Motion was made and passed that committees draw up suitable resolutions. The president appointed the following: On the death of Dr. Kalbach, Drs. W. H. Herr, J. Paul Roebuck and A. G. Bowman. On the death of Dr. Lincoln, Drs. McCaa, Dunlap and Breneman.

A letter from the Commission on Medical Expert Testimony and one from the Committee on Public Policy and Legislation of the state society in reference to several bills introduced at this session of the Legislature were referred to our Committee on Public Policy and Legislation. Motion was made and unanimously passed that this society go on record as favoring animal experimentation in the study of disease. A letter from the Philadelphia Pediatric Society was read and referred to the legislation committee.

The secretary read a letter from Dr. R. C. Kirkwood, medical director of the Mountain View Sanatorium, at Lake View, Washington, in reference to the necessity of a free dispensary in a city with a population of 50,000. The secretary was instructed to answer this letter.

Dr. Appel for the Library Committee reported that Cabot's Physical Diagnosis and Moynihan's "Abdominal Operations" had been bought and placed on the shelves of the library.

The Lancaster City and County Society met in Malta Temple, Lancaster, April 7, with Vice-President Day presiding and thirty-seven members present. The minutes of the March meeting were read and approved.

Dr. T. M. Rohrer read the paper prepared by Dr. A. G. Hess on "Pneumonia in Adults; Diagnosis and Treatment." Dr. Harry Pomerantz read a paper on the "Diagnosis and Treatment of Pleurisy and Pleuritic Effusions." The papers were discussed by Drs. Herr, Appel, Miller, Stein, Walter, Alleman and Newpher.

Upon motion the treasurer was instructed to pay the *per capita* assessment of the six honorary members to the state society. Dr. Appel, for the Library Committee, reported that a gift of the library of the late Dr. Kreiter had been received from Mrs. Kreiter; the secretary was instructed to acknowledge the same and to tender Mrs. Kreiter the vote of thanks of the society. The committees appointed to draw up resolutions on the deaths of Drs. Abram C. Treichler and Adam L. Kalbach read the resolutions, which were spread upon the minutes and a copy sent to the respective families. The legal commmittee is continuing its good work in following up and cleaning out the illegal practitioners of medicine.

HENRY B. DAVIS, Reporter.

MONTGOMERY—March, April.

The Montgomery County Society met at Charity Hospital, Norristown, March 3.

Dr. Judson Daland of Philadelphia, gave a talk on "Kidney Efficiency." He spoke upon the simplicity of structure of the kidney, and that the efficiency largely depended upon the behavior of the secreting epithelium of the tubules and glomeruli. The epithelium cells are involved in acute parenchymatous nephritis, and also in most cases of chronic diseases of the kidney. Insufficiency of the kidney is sometimes due to nonrenal diseases, such as interference with the blood supply of the kidneys, an interference with the return of blood to the general circulation by the way of the renal vein, any obstruction to the renal tract, whereby the pressure in the pelves of the kidneys is increased, etc. Attention was called to chronic congestion of the kidney as a cause of marked impairment of renal function, and the influence of such congestion as a complication of chronic nephritis, often resulting in uremia, coma and death. The phenolsulphonephthalein is regarded as the best test for the estimation of renal function. Some think the indigocarmin test the better.

Dr. B. A. Thomas of Philadelphia spoke upon "The Surgical Aspect of the Kidney." He illustrated with many diagrams and charts, showing clearly the results of his findings.

Dr. C. C. Wolferth of the University of Pennsylvania presented the laboratory side of the subject, and went over the technic of the tests in all the pathological conditions of the kidney.

At the meeting of March 17, Dr. Joseph Sailer of Philadelphia gave a talk on "The Ductless Glands," which was illustrated by lantern slides and charts. He went over the diseases caused by each gland, and then showed pictures illustrating each condition.

Dr. George W. Miller of Norristown opened the discussion, and presented a fetus, with each one of the ductless glands carefully dissected out showing the position and relation of same.

The society at this meeting purchased a first class lantern, in order that they may have suitable facilities for men who wish to give illustrated lectures before the society.

The Montgomery County Society met at Charity Hospital, Norristown, April 7.

Dr. George W. Norris of Philadelphia read a paper on "Blood Pressure." He first gave the mechanism affecting blood pressure, such as the heart, blood, and blood vessels. Certain of the glands of the body act as emergency organs. The adrenals and pituitary glands are called upon when the blood pressure is low. He advised the careful study of the diastolic and pulse pressure over the systolic pressure, the auscultatory being the only correct method of testing the diastolic. The instrument recommended was the Nicholson, it being the most satisfactory all around instrument.

At twenty years the normal pressure may be counted as 120; add one millimeter for every two years of life, and at sixty the normal blood pressure would be 140. Children's blood pressure varies from 45 to 95. A pressure of 160 always indicates disease. A lowered blood pressure occurs in fevers, hemorrhage, shock, pneumonia, tuberculosis, etc. An increased pressure occurs in nephritis, cardiac lesions, vascular lesions, such as apoplexy and nervous diseases. Average length of a life after a blood pressure of 200 or more is four years for men, and five years for women. Treatment consists in rest, regulation of life, diet, sleep, hydrotherapy, decrease of fluid intake, certain drugs as thyroid, iodids, glonoin. For emergency treatment, bleeding, nitrites, jalap powder, ice bag, and mustard foot bath, are resorted to.

Dr. Nicholson of Ardmore, who is inventor of the Nicholson apparatus, discussed the paper, as did also Drs. Elmer, Hunsberger, Thomas, O'Neal, and L. Eisenberg.

At the meeting of April 20, Dr. G. G. Davis of the University of Pennsylvania, gave a talk on "Joints and Their Troubles." Dr. Davis said that the unsuccessful treatment of diseased joints was due, in a large degree, to the physician not thoroughly understanding the anatomy of the joint.

Edgar Stanley Buyers, Reporter.

PHILADELPHIA—March, April.

The Philadelphia County Society met March 24, at 8:30 p.m., President Montgomery in the Chair.

A paper on "The Contrast between the Surgery of the Civil War and That of the Present European War," was read by Dr. W. W. Keen. The first notable difference between the surgery of the Civil War and that of the War of 1914-15 is in the weapons of warfare. The Minié ball named after a French officer who devised it in the middle of the nineteenth century, consisted wholly of lead. Its muzzle velocity was 963 feet in a second and its effective range was about 3000 feet. The modern missile is far smaller and lighter, is driven by smokeless powder and thus has a greater velocity. Its effective range is nearly three miles. Its violent explosive effect at short range has given rise to the charge by both sides in the present war that dum-dum bullets were being used. I think that the most competent testimony is that this charge is incorrect.

Modern surgery was founded in the middle of the sixteenth century by that fine old Hugenot, Ambroise Paré. Up to his time, to counteract the "poison" which was believed to be caused by gunshot such wounds were treated by pouring in boiling oil. Bleeding after amputation was staunched by the application of hot pitch and the red-hot iron. One day when the hot oil and pitch gave out Paré was compelled to use simple ointment and dexterous bandaging. He spent that night in misery lest the patient should incur direful dangers. To his surprise and gratification in each case the result was far better than the old treatment and thereafter he banished the former means of torture. In 1552 he discarded the hot iron and tied the blood vessels to stop the bleeding. Had there been any antivivisection society in his day, it doubtless would have accused him of "human vivisection," for this was indeed a bold experiment on man. Had he, or some later surgeon not tried this experiment on man or animal, we should be still using the cruel cautery.

Our dressings in the sixties consisted of simple ointments, often only cold unboiled water, followed later by constant poulticing to promote the abundant flow of pus. The hypodermic syringe was not in general use during the Civil War. The ordinary probe used to determine the presence of a bullet, used unsterilized, was a means of carrying infection deep into the wound. The sponges then used were washed in ordinary water after an operation and if one fell to the floor during an operation it was again used. What we did in the pre-Listerian days seems now almost incredible. Before an operation nothing was rendered "sterile." I have seen my old teacher, Prof. S. D. Gross, give a last fine touch to his knife on his boot, even on the sole, and then at once use it from the first cut to the last. When threading a needle we all pointed the silk by wetting it with germ-laden saliva, rolling it between germ-laden fingers. Of over 2800 cases of blood poisoning (pyemia) during the Civil War only 71 recovered. Less than eleven in every hundred cases of lockjaw got well; the mortality from trephining was sixty-one per cent. One peculiarity of the present war is the frequency of lockjaw and especially of "gas gangrene." Especially in Belgium and France the soil has become so thoroughly inoculated with the germs of suppuration, tetanus, "gas gangrene," etc., that infection occurs in a large proportion of wounds.

The most transcendant of all problems in surgery for years past and reaching its utmost urgency in the present war, is the discovery of the means by which in a thoroughly infected wound, without injuring the patient, we can destroy the germs, sterilize the wound, keep it sterile, and also neutralize the poisonous products of the bacteria diffused all through the body by the blood and the absorbents.

"I spent three months in a large hospital in Lyons," writes my friend, Dr. Carrel, in a letter dated Paris, January 4, 1915. "I realized then that the main cause of death or of amputation was sepsis . . . . It was hardly possible to utilize my work in vascular surgery. Therefore I decided to modify the direction of my work and to do what is chiefly needed, *i. e.*, to find new methods of fighting surgical infections. It would save thousands of men and of limbs."

Can there be any one so cruel as to put even a straw in the pathway of this distinguished surgeon in seeking these methods? Not thousands, but hundreds of thousands, in every country under the sun, in civil life as well as in war, would be his debtors, and not only now, but for all the centuries to come. The Rockefeller Foundation has generously provided the funds for his researches.

Typhoid has been practically abolished in the American Army by antityphoid vaccination. While in the British Army this vaccination is not mandatory, it is voluntarily submitted to by about eighty-five per cent. of the soldiers. Their protection is shown in the statement of the British War Office that in 359 cases uninoculated there were 48 deaths; in 247 cases fully or partially inoculated there were two deaths. Comparison shows it was seven times safer to fight all through the three days of Gettysburg than to be subjected to treatment in a city hospital with the septic surgery practiced in the sixties. In the multitude of various operations done at the present, few have a mortality exceeding ten per cent. and most not exceeding one, two or three per cent. I have been so fortunate as to have seen and even taken part in this wonderful progress. I know that the chief means of this progress in medicine is animal experimentation.

The Philadelphia County Society met, April 14, at 8:30 P.M., with President Montgomery in the Chair.

A paper on "Indications and Contraindications for the Use of Alcohol as a Drug" was given by Dr. M. H. Fussell. The indications for the use of alcohol as a medicine are few. The contraindications are many. I was taught to use large quantities of alcohol in all cases of infection and in most cases to use it from the beginning. My practice now is to use alcohol very rarely and then usually in small doses. When a confirmed alcoholic is stricken with an acute infection, such as pneumonia, I believe it is good practice to give relatively small doses of whisky or brandy, half an ounce, every three hours from the beginning of the disease, in order to forestall restlessness and mental disturbance which often occur. In certain cases of delirium tremens small doses are recommended. Large doses inhibit all the functions of the body and are deleterious. In certain cases of advanced alcoholism where there is extensive arteriosclerosis it is good practice to withdraw the alcohol slowly. While I believe that sudden withdrawal is the best practice in the vast majority of cases there are cases in which degeneration of vessels or kidneys progresses rapidly if cessation is abrupt. In severe cases of diabetes mellitus in which it is necessary to give patients occasional days of food of small caloric value to be followed by oatmeal days, alcohol can be used in large quantities with good effect during the oatmeal days. In these same cases it can be used if used as a daily ration of moderate amount. Mild cases of diabetes are better off without alcohol. In the infectious diseases, except in certain conditions, I believe alcohol to be unnecessary and that its use may be attended with actual danger. It is my custom never to use it in infections, unless the person has been an alcoholic, or administration of food is so difficult that small quantities of alcohol may be given in hope that it will be of some food value. In pneumonia I have felt that in severe cases patients do better with digitalis, ammonia, caffein, or strychnin without alcohol. Alcohol is never used routinely in typhoid fever. In chill I use ammonia, caffein rather than alcohol because they are actual stimulants and have no bad after-effects.

The time is perhaps past when the average physician will recommend alcohol for purpose of whipping up a flagging appetite. I believe it a great mistake to use in this manner this very dangerous remedy. It may perhaps be true that alcohol can be consumed as a food, but except as noted above in its use in infections or in diabetes, it should never be used as such. Particularly pernicious is the use of various liquid foods on the market. As a matter of fact, they are solutions containing as the essential constituent small amounts of protein substance and carbohydrates preserved in alcohol. In all stages of tuberculosis alcohol is contraindicated. In functional nervous conditions the very great danger of establishing a habit far outweighs any theoretical value of alcohol. Exposure to heat and cold is followed by much more serious results when alcohol is taken than when it is not. In snake bite, excision of the part, local administration of potassium permanganate and the administration of caffein and ammonia constitute much more rational treatment than the use of alcohol. In normal health the use of alcohol as a beverage is pernicious in a high degree. That men and women of attainment have been habitual users of alcohol without appreciable lessening of ability or shortening of their lives is an exception to a very general rule. It is our duty as physicians to stand straight, to maintain the truth, and to warn our patients and the public that the habitual use of alcohol, in large or small quantities, is pernicious and fraught with much physical danger, to say nothing of the moral, domestic and financial ruin accompanying its extensive use.

"Alcohol and Insanity" was given by Dr. James Hendrie Lloyd. It is claimed that the art of distilling strong alcoholic drinks, and putting them on the market at a low price, is largely a modern art. The ancients had the fermented juice of the grape, but they probably had no liquors as strong as our modern whisky and gin. The Arabs in the eleventh century are said to have discovered the art of distilling the spirit of wine, and they gave to this fluid the name of alcohol. Hence the abuses of alcohol have given a special character to this problem in modern life which it probably did not have among the ancients,.

Alcohol causes a variety of mental disorders, the commonest of which is delirium tremens. This affection may come on after the alcohol is withdrawn, the form known as *delirium potu suspenso.* This is probably due to some process of faulty metabolism, or autointoxication, for it continues for a long period without the ingestion of more alcohol. This has led to the theory that delirium tremens is always a disease of abstinence. The idea is that the alcohol acts as a toxin, and that an antitoxin is formed to combat it. When the alcohol is withdrawn the antitoxin acts unduly, and in its turn causes delirium. Account must always be taken of the vascular changes in old inebriates, which may be promoted by alcohol; but such vascular changes as arteriosclerosis are not necessarily always caused by alcohol, for they are seen in persons who never drink alcoholic liquors. They are not uncommon, in fact, in persons past sixty years of age. Other forms of alcoholic insanity are described, and special reference should be made to the class known as dipsomaniacs, who drink from uncontrollable impulse. This impulse itself is a symptom of nervous instabiity, and may even be a form of insanity, such as a maniacal or epileptoid outbreak. In such cases the alcohol is not so much the cause of insanity, as insanity is the cause of the alcoholism.

Pseudoparesis, due to alcoholism, has many resemblances to the genuine syphilitic paresis, but differs from the latter in being curable on the deprivation of the alcohol.

Chronic alcoholics may develop a chronic delusional insanity of persecution, of having enemies, of being poisoned, of disease, etc. The delusion of marital infidelity, in which the patient suspects his wife and may be dangerous to her, is especially common. Such chronic lunatics may be homicidal; they sometimes develop expansive delusions, and become incurable. Statistics properly compiled do not prove the statement sometimes made that our insane hospitals are largely populated by the victims of alcohol, and such a statement is a libel on the insane. In many hospitals statistics are notoriously inexact and unreliable. This arises from several causes, especially from the difficulty of estimating the question of alcohol in many of the insane.

Dr. H. A. Hare: In so large a subject and with so little time it is impossible to express one's views without seeming to come into conflict with the views already expressed. I imagine that most of the members of this society here to-night have come, not to be enlightened upon this topic, but rather to have crystallized in their minds a conception of the value of alcohol in medicine. There is too much tendency to dogmatism regarding matters still theoretical. Positive statements are made against or for this drug (most of them against) and some terms have been used which to my mind are not clear. For example, Dr. Lloyd said that in mania potia or symptoms coming on in persons deprived of alcohol, the manifestation was the result of some disordered metabolism in the brain. I should like to ask what is meant by "metabolism in the brain." Dr. Fussell has left the impression that alcohol is contraindicated so much that it is practically never indicated. I take exception to that impression. While there are many contraindications, I have seen alcohol do good. I have seen benefit from use of alcohol in the proper dose in phthisis; not in place of food, but in addition to it. Any drug that has any power for good must also have power for harm if wrongly used.

Dr. Seneca Egbert: The opinion of the medical profession has changed remarkably within the lifetime of most of us in regard to alcohol, and without doubt this change of opinion is having its influence upon the laity. This is seen in the attitude of large corporations which will not employ men who use it. I appreciate the differentiation Dr. Taylor has given us between alcohol as a food and as a fuel. We must all feel that the development of scientific knowledge is working for the betterment of humanity and for this we are thankful.

Dr. William E. Hughes: It goes without saying that the world would be better off economically without alcohol as a beverage. Alcohol seriously hampers physical and mental efficiency. We are still not in a position to say, however, that alcohol is not useful. Alcohol is a poison, and like so many other poisons its deleterious effects depend to a great extent, may be altogether, upon dosage. In large doses it is a poison. In small doses, if not a food, it is a heat producer, and in that way beneficial. Alcohol up to a certain point is permissible as a food. That point, however, is undetermined, and for that reason probably it would be better to eliminate alcohol altogether. Medicinally Dr. Fussell has given us a great many indications for the use of alcohol. My experience has led me to believe that alcohol does save life and in the class of cases Dr. Fussell has enumerated. We all know that after a man has been poisoned with alcohol, it is necessary for the preservation of his well being to keep up a moderate dose of the drug. In cases of decided depression, especially depression due to toxemia, unquestionably alcohol is of benefit. I can not demonstrate it. You must take my word that I have seen this thing. Whenever a certain event follows the use of a certain medicine, I ask myself whether there is any connection between the two. In the use of alcohol the result has been so frequent that I am forced to the conclusion that it is due to alcohol. When alcohol is taken to an appreciable stimulation harm has been done. So in the toxic diseases, if you appreciably stimulate you have gone too far. I do not hesitate to give alcohol in typhoid fever, pneumonia or Bright's disease in cases in which the disease is not acute. About organic disease being produced by alcohol,—I do not know. My impression is that many of the diseases, chronic Bright's disease, arteriosclerosis, cirrhosis of the liver, are not due directly to alcohol. They are favored by alcohol but I am not certain that alcohol is the producer of them. Differing with Dr. Fussell I believe that alcohol used in small quantities is of use in many cases of tuberculosis. I would advise alcohol to restore the appetite of old people. I am unalterably of the opinion however that economically the world would be better off if alcohol were eliminated altogether from daily use. Used continuously I do not think it ever does good to any one, young or old.

Dr. James Tyson: I am a believer in alcohol as a medicine. I do not speak from the standpoint of a chemist. It is a stimulant which keeps alive a gleam of life or excites it to greater activity until the termination of the case into health. There is nothing more baneful than the habitual use of large quantities of alcohol through life, but as a medicine in selected cases I have found it of benefit.

The Philadelphia County Medical Society met April 28, at 8:30 P.M., President Montgomery in the Chair. The program for the day consisted in a symposium on Emergency Treatment.

A paper on "Convulsions," was presented by Dr. George E. Price. Convulsions divide themselves naturally into two groups: Functional and organic. While the same treatment is applicable to the majority, no one treatment will apply to all; no one would handle a uremic patient as they would an hysterical patient. A diagnosis, or at least an approximate diagnosis is, therefore the first essential. There are certain practical aids to diagnosis which can be obtained quickly: Approximate age, general appearance of the patient, character of the convulsion, presence or absence of consciousness, of distinctive odors, such as in uremia or the odor of alcoholic excess; character of the breathing, history of prior attacks, history of traumatism, overindulgence in alcohol, the taking of poison. When called to attend an infant in convulsions, if the "pride of the family" is not already in a hot bath, the physician should at once place the child in a warm bath or pack with an ice-cap to the head. If this does not suffice, chloroform will terminate the convulsion and bring about relaxation which allows emptying of the bowel by a simple enema. This can be followed by the rectal administration of chloral and bromid in dose suited to the age of the patient, and as soon as the child becomes conscious a purge, such as calomel, followed by castor oil or rhubarb, should be given by the mouth. The hot bath is contraindicated if the fever is high or there are signs of lung involvement. Excellent results have been reported by lumbar puncture which has been recommended in severe cases. Holt advocates the use of oxygen, and Sanders of morphin in place of chloroform. Oxygen is not readily procured, and I should certainly hesitate to use morphin with a small child unless every other measure had failed.

In the epileptic attacks there should be no difficulty in diagnosis. If the patient is in bed the matter of treatment is simplified; if on his feet, he should be lowered quickly to the floor, and this is best done by approaching the patient from the rear, which I recommend as being safer for the attendant. A pillow should be slipped under the head, the clothing loosened about the neck, a small article, such as a brush handle slipped between the teeth to protect the tongue. In the average attack no other measures are as a rule necessary. It is in the rapidly recurring attacks that other measures must be resorted to, as described in the treatment for infantile spasm.

In the treatment of hysterical attacks the room should be cleared as quickly as possible. Use suggestion; assure the family in the hearing of the patient that the condition is not serious and that the convulsion will soon cease. Quiet will often abate the attack. A hypodermic of water is sometimes effective. Inhalation of amyl nitrite is of value, especially as it makes a profound mental impression. In uremic convusions, if the temperature is high, the patient should be placed in bed, wrapped in a sheet wrung out of water at 70° to 80° and this covered by a dry blanket. If the temperature is not high we can resort at once to the hot pack at intervals, followed if necessary, by chloroform and the other usual remedies. Morphin should not here be used. If the blood pressure is very high, nitroglycerin in 1/100 grain doses every four hours should be given. If the patient becomes cyanotic venesection, followed by intravenous injections of normal saline solution, is of value. Among other forms of convulsions we have those of tetanus and of strychnin poisoning. In tetanus the antitetanic serum is the chief remedy; first, intraspinally; and, after the acute stage, subcutaneously. If necessary, chloroform, morphin, chloral and bromid may all be used.

A paper on "Pulmonary Hemorrhage," was presented by Dr. John D. McLean. Few pulmonary hemorrhages have a fatal termination. The physician should calm the patient and the family. It is very difficult to convince your patient that you are master of the situation. I usually say, the nose bleeds, why should not the lungs? Do not hesitate to say again that the bleeding will soon stop. Patient should be in a half-reclining position to facilitate easy expulsion of blood, and should be absolutely at rest, not even lifting the hand. An hypodermic injection of ¼ grain of morphin quiets heart action and calms the patient. If bleeding perists, repeat the dose in two hours. An ice bag may be placed over the point of bleeding if known, but do not try to find it, and over the heart. One dram of the fluid extract of ergot may be given but the dose not repeated. Cracked ice in the mouth is much to be preferred to salt and will not tend to produce nausea. If hemorrhage is large, salt solution by the bowels is desirable, but first decide whether the mental quiet will not be upset. After three or four days examine the chest for lung involvement.

Proper treatment at the first signs of incipient tuberculosis is more important than anything else. After all bleeding has ceased, patient should continue to rest in bed for one week and should receive easily digested food, with exclusion of tea, coffee and all alcoholic drinks. Bowels should be kept open with the proper laxatives. Do not feel afraid that patient will die as result of the hemorrhage; I have seen but two deaths, and these were due to large doses of ergot frequently administered. It is of the utmost importance to calm the patient. Give assurance that hemorrhage will soon cease and say it with the knowledge that it is true. Examine patient thoroughly to determine cause of bleeding.

"Efficient Treatment of Urgent Cases in the Hospital Accident Ward,' was presented by Dr. John B. Roberts. I consider the want of efficiency in American hospitals a distinct peril to many patients. This arises as does the anesthesia peril, from comparatively untrained medical graduates often being given responsible positions before they are fitted by experience for the post. The administrator of anesthetics and the intern who gives first aid to injured should have had, at least, one year's experience in practical work, and training under a superior officer accustomed to dangers of anesthetic agents and surgery of accident emergencies.

Burns and wounds should be sterilized, and usually are better dressed dry than wet. Patients with crushed limbs should not have a tourniquet or rubber band placed around the limb far above injured portion, because the hemorrhage should be controlled at the region already more or less devitalized. Otherwise, the surgeon, when he comes to amputate after reaction of patient, may find gangrene of flaps occur because of unwise constriction of the limb in the effort to check hemorrhage. Gunshot wounds and abdominal injuries should not be probed, nor should enemas be given to patients with suspicious traumatisms to the abdomen, lest a ruptured intestine allow the enema to flow into the peritoneal cavity. It is probable that many fingers have been unnecessarily amputated because a young intern did not realize that a plastic operation could be used to cover bones stripped of integument. Acute abscesses and furuncles should be treated by incision to evacuate pus, but should not be plugged with gauze. Gauze does not drain pus, but becomes dry, obstructs the opening like a cork; therefore, it causes pain by increasing tension. Open fractures should be sterilized and treated with retentive apparatus.

It is unnecessary to do spinal puncture to establish diagnosis immediately of brain injury. Examination of spinal fluid is frequently unnecessary, and when necessary, puncture should be done with absolute asepsis and by a trained hand,—two essentials difficult to obtain in the usual accident room in charge of an inexperienced resident physician. The usual fracture of the lower end of the radius should not be treated with a spilnt until thorough reduction has been accomplished. Fractures of the neck of the femur should not be exposed to active manipulation in the endeavor to make a diagnosis. This is particularly true in these fractures occurring in the old in whom impaction is frequently a blessing in disguise. The knowledge of inexperienced hospital residents is usually not sufficient to justify a decision as to whether the impaction should be broken up.

"Compound Fractures," was presented by Dr. George P. Müller, Compound Fractures of the skull may involve the vault or the base. Fractures of the base require no immediate treatment, except cleansing and protection of the openings leading to the cranial cavity. The ear after cleansing should be plugged with gauze. These fractures occasionally require a decompressive operation. I agree with Dr. Roberts that spinal puncture for determination of blood in the spinal canal in such injuries is rarely necessary. In compound fractures of the vault we usually have comminution or decompression of the fragments, and the immediate treatment differs in no way from the emergency treatment of fracture of other bones. In fractures of lower jaw a chin-trough and a Barton bandage and a mouth wash constitute tne emergency treatment, to be followed by reduction and use of a perfectly fitting interdental splint. In compound fractures of long bones we are confronted with various degrees of fracture.

The most important duty of the physician first called to attend a compound fracture is simply to put a sterile dressing over the site of injury and firmly hold it in place by a bandage. Tincture of iodin may be poured into the wound, but nothing else should be done. If shock is to be treated, the common habit of injecting strychnin is to be condemned. Morphin should be given to be followed by heat and the head-down position, and use of saline solution as soon as convenient. Some of these cases will come under the care of the family doctor. The patient should be anesthetized, the limb raised and the bed or table covered with rubber sheeting, on top of which is laid a sterile sheet or towels. The entire limb is painted with tincture of iodin and the first-aid bandage cut off and the dressing removed. The remainder of the limb is painted with iodin and the limb laid down on the sterile sheet. Foreign bodies should be removed. The wound will usually require enlarging. Small pieces of bone should be removed but large pieces preserved. Shreds of tissue should be cut away and entire cavity of the wound, particularly the ends of the fragments, should be swabbed with tincture of iodin. It is essential that every open space be reached by the iodin. Provision should be made for drainage with small pieces of rubber dam. The advantage of dependent drainage should be remembered and counter openings made where feasible. Partial closure of the wound is done and then the fracture should be carefully and accurately reduced. The rubber dam may be removed in some cases at the end of twenty-four hours; in others it may be necessary to replace it with rubber tubes.

The various fractures will be splinted in accordance with their locality. I was much impressed by a recent article advocating no splint in compound fracture of humerus, simply slinging the wrist close up to the neck and using the weight of the elbow as an extending force during the time that daily dressings are necessary. Most compound fractures of the leg should be treated by a swinging splint, such as the Hodgson or one of its modifications. I do not like plaster of Paris as an early dressing, and never use the circular bandage unless the wound is mostly healed. If plaster of Paris is used the cast should be covered with shellac and after making the opening over the wound a mixture of cotton and rubber should be packed between the plaster and the skin so as to seal off the limb from the wet dressing and discharge. It will be necessary to plate certain fractures, but that should be done only in a hospital and by one who has the proper armamentarium and technic. Drainage should be removed gradually. It is the emergency treatment that determines the amount of infection and the necessity for secondary operation.

"Emergency Treatment of Ruptured Uterus and Ruptured Ectopic Pregnancy," was presented by Dr. Richard C. Norris. The obstetric emergencies, rupture of the uterus and of ectopic pregnancy, practically become a discussion of the conservative vs. the radical treatment of these two conditions. Rupture of the uterus is said to occur once in from 1000 to 4000 labors. Untreated, the maternal mortality is ninety per ecnt.; the infant mortality, ninety-five per cent. Under appropriate treatment the mortality has been reduced to fifty or sixty per cent. The violence of operative procedures when the uterus is firmly contracted, or failure to recognize an obstacle to labor, has been the cause, with one exception, of all the cases of rupture during labor that I have seen in twenty-five years of active obstetric work.

When a multipara suddenly recognizes a sharp tearing pain, and labor pains cease abruptly, accompanied by the rapid appearance of signs of hemorrhage and shock; when, after attempting version for a cross-birth the patient falls into collapse, the merest tyro in obstetrics should recognize at once this most serious calamity of labor. The indications are to deliver the child and control hemorrhage and prevent infection. My advice to the man of average experience with operative obstetrics is to weigh carefully the well-known danger of moving the patient to a hospital, to note the degree of shock and collapse, and if provided with means of surgically clean work, to examine carefully to learn the location and extent of the rupture and decide whether he is capable of delivering the patient and applying the conservative treatment by tampon. This work demands the best surgical technic. Like all the emergencies in obstetrics, if the first aid fails to protect from infection, the subsequent skill called to the case may utterly fail to save the patient. Even temporary control of hemorrhage can not be accomplished until the child is delivered. If the greater part of the fetus has escaped into the abdomen nothing short of an abdominal operation can be considered and treatment in the hospital offering the promptest aid is necessary. If the child is still in the uterus and the rupture has occurred during attempts at delivery, if the head is within reach apply the forceps, perforate the skull of the dead fetus and carefully extract it. Deliver the placenta manually at once. Explore the rent carefully to avoid a complete rupture. Firmly tampon the rent after applying tincture of iodin to it; then the entire uterine cavity and vagina should be firmly plugged. If the laceration is on the anterior wall, suspect injury to the bladder. Hold the uterus anteflexed by a firm abdominal binder and pad. If the rent is on the posterior wall, retroflex the uterus and hold it thus by the pad and binder. If the bladder has been torn introduce a self-retaining catheter. Freely stimulate the patient only after reaction has appeared, giving first and at once salt solution in moderation by hypodermoclysis and enteroclysis. The tampon in the uterine tear may remain in place not less than seventy-two hours, when it may be gently removed, and if necessary replaced.

The danger of transporting a patient with rupture of the uterus is a very grave one and statistics of treating incomplete rupture and small complete ruptures warrant this conservative treatment at bedside of the patient, in clean cases treated by a clean obstetrician. Cases badly shocked show a high mortality from operation and this conservative treatment, temporarily used, may make operation after reaction much safer in such cases.

Cases that come to section may sometimes be safely treated by suture of the uterus, but usually will be more safely treated by hysterectomy, and the cervical stump should be made extraperitoneal by suture in the lower angle of the abdominal incision if the prior handling of the case presupposes infection.

Contrasting the conservative treatment of ruptured ectopic pregnancy with the prompt surgical treatment of laparotomy, there is in my judgment less to be said in favor of the conservative treatment. A diffuse hematocele of small size that sometimes follows tubal abortion from the fifth to the seventh week in which a tubal mass can not be felt, and the clinical signs of continued bleeding are not present, may be treated expectantly with the hope of ultimate absorption of the blood mass, but these cases are rare. Intravenous transfusion of salt solution even during transit to hospital has saved many desperate cases in my hands. A quick, clean section, exsection of the offending tube, removal of the large blood-clot by sponging, and rapid closure without drainage is the usual operation of choice. The mortality rate of ruptured ectopic pregnancy under surgical treatment varies from three to four per cent.

Dr. John C. Hirst: I think we have all seen, after delivery in a rather hard long-delayed labor with or without instruments, a moderate amount of post-partum hemorrhage with an immoderate amount of shock. These cases are often due to rupture and incomplete rupture of the uterus in the lower uterine segment going up behind the bladder and not through the peritoneum. The cervix is split so that you can feel the ring posteriorly and feel nothing anteriorly, and above that can be felt the contracted internal os. Here there is apt to be prolonged and fatal hemorrhage with infection of both sections of the broad ligament. A case of that kind does not, as a rule require operation, but careful packing. Many of such cases come to us infected, which could have been saved by early packing removed every twenty-four hours. Two weeks are usually sufficient to control a case of that kind. Under such conditions I have seen two cases of rupture in the last two weeks by the immoderate use of pituitrin, in which the cervix was thought to be easily dilatable. There is a tendency to forget the expulsive action of pituitrin and a full dose under these circumstances is apt to produce this accident. If the symptoms of rupture justify the diagnosis of rupture before the head has passed down to the vagina I believe such patient is safer if moved to the hospital with the baby undelivered, as the child acts as a plug to prevent bleeding and prevents also prolapse of the intestines. In the undoubted rupture of extrauterine pregnancy I think we can not emphasize too strongly the need of immediate operation in the very great majority of cases.

Dr. John M. Fisher: I am reminded of a patient with ruptured ectopic pregnancy operated upon by the president of this society at the Jefferson Hospital. The woman was supposed to be in a dying condition. She was pulseless when placed upon the table. She was given an intravenous injection of salt solution and although she was gasping for breath at time of operation she made a rapid recovery. The case made me feel that there is no time that we may consider a patient so far gone from internal hemorrhage in ruptured ectopic gestation that operation is contraindicated. The point of importance is not the ruptured ectopic pregnancy at the time of rupture, but the making of the diagnosis after the rupture has occurred. In many cases I have seen the diagnosis was not made previous to operation, and in reviewing the history there should have been no doubt of the condition.

Elmer H. Funk, Reporter.

PHILADELPHIA WEST BRANCH.

The West Branch of the Philadelphia County Medical Society met March 16, at 9 p.m., Dr. A. W. Hammer, in the Chair, a symposium on Narcotic Habitués and Their Treatment being presented.

"The Relative Frequency of the Morphin and Heroin Habits Based on Observations at the Philadelphia General Hospital," was given by Dr. Clifford B. Farr. During the past summer my attention was called to the increasing frequency of the heroin habit, and since the enactment of the Harrison Law the number of admissions to the Philadelphia

General Hospital of cases of morphin and heroin addiction has very markedly increased. In the first sixty-eight days of 1915 eighty-six cases of heroin addiction were admitted, while in the year 1911 there was but one. In an analysis of 120 cases 91, or 75 per cent. were men; 29, or 25 per cent., women. A large proportion were in the twenties. A few began the habit as early as the fifteenth year. In 25 persons the habit had persisted for less than one year; in 23, from one to one and a half years; in 41 from two to two and one half years; in 11 for three years; in 5 for four years; in 3 for five years.

The data would seem to prove that the heroin habit has reached huge proportions in the congenial soil of the "Tenderloin" within the last three years. In not a single case had the drug been prescribed by a physician. In all but two cases the drug was taken as a snuff. In almost all cases ⅙ grain (1 centigram) tablets were used. The dose ranged from four to thirty-two grains daily. I have reason to believe that in the majority of these cases cocain was first used although its use as a habit was denied. Twenty-five of the 120 heroin patients used morphin either before adopting heroin or off and on as a substitute for it. A number had substituted one drug for the other to "break the habit." In an analysis of 176 cases of the opium habit in other forms there was a fair proportion of middle-aged and elderly persons. In many cases the morphin habit was taken up merely as an indulgence. In other cases it was attributed to medication. Briefly stated, the heroin addiction is a negative pleasure; the cocain, a positive one. As a rule the withdrawal symptoms are not so severe in heroin as in morphin habitués, but the difference is one of degree rather than of character. Heroin was introduced into practice about 1898 (Dressér) and was recommended for the relief of pain, and particularly for respiratory conditions. It was repeatedly emphasized by reporters that it was not a habit producing drug, and in France it was lauded as a cure for the morphin habit. As a result a number of cases were reported by various men traceable to physicians. Phillips as far as I can discover was the first medical writer to describe the snuffing habit as it then existed in the "tenderloins" of the Middle West. Blanchard in 1913 was the first to notice the prevalence of the habit among soldiers, to whom it was known as "happy dust."

My conclusions from a study of these cases as to the cause of the sudden and appalling increase in the heroin habit are as follows: The severe laws enacted against cocain two or three years ago favored the introduction of a drug which might be taken in the same way, either with or without the cocain. In the former case it tended to overcome some of the unpleasant features of the cocain habit. The suppression of opium dens by the police had a similar though a less marked effect. Those addicted to the drug seemed to have a proselyting zeal which is difficult to account for, except in the case of those who were venders. The psychology of the "quarter" and the peculiar ideas of "habit" persuaded many persons that they had an addiction when they clearly had not as yet acquired it. The business was well organized and included manufacturing chemists, middlemen, druggists and venders. The epidemic arose quite independently of physicians and until recently was unknown to them.

"Frequency of the Cocain Habit," was given by Dr. C. G. Steinmetz, Jr. My observation is based upon a series of fifteen cases in which the habit had been acquired by men employed where the drug was manufactured. The series represents a particularly difficult group of patients to successfully treat because of their occupation in the drug manufacture. The ages of the men ranged from twenty-three to forty years, and the daily quantity taken, from 20 to 60 grains. The method of taking was solely by snuffing, probably being the most convenient. In all of these cases there was a neuropathic tendency or inheritance. As long as they had remained, constitutionally speaking, above par, they were able to combat this habit, but owing to the nature of inside positions they soon became anemic and were easy victims. This emphasizes the fact that employers should hire only those inindividuals who are in the best physical condition and assume the responsibility of keeping them in the best of health.

All of these patients had previously indulged in taking alcohol in its varied forms but had acquired no other drug habit. Circumstances in this group made possible the withdrawal of the drug and twelve developed acute symptoms. Hallucinations of sight and hearing, paresthesia (foreign bodies under the skin), epileptiform convulsions, acute delusional insanity and Cheyne-Stockes' respirations were among some of the rarer symptoms met with. In the treatment cocain was withdrawn instantly and the patients recovered. Those suffering with delusional insanity, however, retained their delusions after the delirious state had disappeared.

"Management of Drug Habitués," was given by Dr. S. D. W. Ludlum. In the cure of the drug habit it would seem that there must be a change of the bodily condition so that the patient can use his own will. There are several kinds of physical and mental treatments for morphinism and alcoholism. At Blockley I have seen many cases cured by taking hyoscin but the majority of such patients relapsed and made return trips to the hospital. What I think is better is the Town-Lambert treatment, but no treatment is of value without something to sustain the moral nature after the treatment. People are made up of the sympathetic and autonomic nervous systems and are dominated by one or the other of these systems. Eppinger and Hess have worked this matter out fully, as you know. If you paralyze the sympathetic nervous system with morphin, the patient will show predominance of vagatonic symptoms, with the whole train of symptoms which we recognize as morphin symptoms. In the Town-Lambert treatment we have the vagatonic symptoms held in check by the administration of belladonna, and the sympathetic whipped up by xanthoxylin and hyoscyamus. As soon as we have the physical tolerance of the belladonna we have the sympathetic and the vagatonic systems in balance.

It has been stated that the only way to change the desire of the drug habitué is to change the physiology. It has been urged that the state ought to take this matter in charge and help these people to make their wills stronger. If the law governing the use of drugs is active, any treatment will answer, but the Town-Lambert method is effective and gives the greater comfort to the patient than any method I have used. If, however, the law is inactive, it is urged that such habitués should be kept under control and away from town and cities for six months. The two systems, the sympathetic and the vagatonic, should be kept in balance by a healthful life until the body has the power to continue them in equilibrium without drugs and without artificial moral support. A normal will grows up when the body has a chance.

Dr. S. D. Ingham, in discussing: The figures given by Dr. Farr would seem to exonerate to a large degree, the physician who has often been blamed for the establishment of the drug habit. As a matter of fact, it is the exceptional case that is traced to the negligence of the doctor. It is, as a rule, the weakling, the low member of society who develops the habit. The withdrawal symptoms are definite symptoms of illness, increasing with the severity of the case. All these symptoms are not due to the morphin toxemia, but in part to the interference with metabolism, giving us a complicated physical condition in addition to the nervous affection. The Town-Lambert treatment is doubtless based upon sound physiological reasoning. I have seen cases that have responded to it nicely, and I have seen cases that have not. In the after treatment there must be the establishment of good habits for after the desire has been changed and the physical condition improved, but a slight indulgence will cause a return of the habit.

Dr. J. W. McConnell: We may use the Town-Lambert treatment and establish the equilibrium, but if we do not go beyond that and, as Dr. Ludlum has said, keep the patient under control there will be reversion to the addiction. The Town-Lambert treatment is at the present time the fashionable way of handling these cases, wherever they may be. The slow withdrawal of drugs still obtains in private practice, however, and is the method employed by some of the neurologists, with strychnin as a stimulant, and belladonna or atropin, with the result of the Town-Lambert treatment. Lester Ward's philosophy is, after all, the explanation of the whole matter; the peculiar psychasthenic state must be controlled.

Dr. H. C. Wood, Jr.: While I do not wish to criticize the efficiency of the Town-Lambert treatment, I can not assent to Dr. Ludlum's explanation of its *modus operandi.* It is not established that there is any real antagonism between the sympathetic and autonomic systems; moreover, all the effects of morphin can not be attributed to a paralysis of the sympathetic system. The statement that hyoscyamus is a stimulant to the sympathetic system is contrary to all accepted opinions of pharmacologists. It contains two alkaloids, hyoscyamin and hyoscin. Both of these are paralyzants to the autonomic system; the latter comparatively feeble, but the former more powerful than atropin. The effects of this prescription are much more reasonably attributed to the action of the solanaceous group upon the brain. The beneficial influence of atropin and hyoscin in drug addictions, not only morphin but also alcohol, has been recognized for many years. The beneficial results of the Town treatment are due to the free catharsis which puts the digestive tract into good condition and gets rid of any possible toxic substance whose absorption from the alimentary canal might exercise an injurious effect, and the belladonna and hyoscyamus by their action on the cerebrum relieve the extreme nervousness caused by the withdrawal of the accustomed narcotic.

Dr. Farr, closing: As one of the speakers said, these patients are in most instances weaklings with no stability of character, and for that reason. the prognosis is bad. It has been found that morphin is at first eliminated almost quantitatively by the intestinal tract but, after habituation this no longer holds true. It is believed, therefore, that there is some destructive power acquired by the body cells which causes the disintegration of the drug. This is not analagous to immunity. The hospital authorities were forewarned that there would be a flood of these cases when the Harrison Law went into effect and made ample provision for their prompt treatment. Practically all cases were given the Lambert treatment. After two weeks when the treatment was completed the patients seemed to have no desire for the drugs. A few cases were treated in the medical wards by withdrawal of the drugs, purgation, enteroclysis, etc., with about the same immediate results. Many patients were sent to a convalescent hospital and an attempt was made to keep the rest under supervision.

Dr. Ludlum, closing: It is a pleasure to see that there is a disagreement among pharmacologists as well as among neurologists. It is sometimes difficult to decide whether symptoms result from stimulation of the vagatonic or inhibition of the sympathetic system. This is not the place to enter into a discussion of the pharmacological problem; the authority which I obtained was from good pharmacological sources, more or less interpreted, however, by neurologists. Symptoms resulting from toxins and antitoxins can be interpreted only through the nervous system. I feel that I must challenge the statement of Dr. Wood, that the effect of hyoscin is entirely upon the brain. We, as neurologists, do not believe it for a minute.

WAYNE—May.

The Wayne County Society held its annual meeting at the Allen House, Honesdale, May 20, with twenty members present. The officers for the past year were all reëlected.

Dr. F. F. Arndt of Scranton read a paper on "Obstetrics," which was discussed by Drs. Kenworthey, Simons, Mullen, Burns and Brady.

Upon a cordial invitation from Dr. W. B. Kenworthey, the next meeting will be held at Milford, Pike County, July 3.

George W. McCafferty, Reporter.

WESTMORELAND—April, May.

The Medical Society of Westmoreland County convened in Greensburg on April 6.

Dr. E. M. Clifford presented a paper on "Eye, Ear, Nose and Throat Work," which was largely an exposition of the relationship existing between these organs; and particularly that inter-relationship of function, proximity, structure and causal pathology. The rôle of the eustachian tube as an active pathway of infection to the middle ear was accented in this paper, as was the obtaining and preserving of physiological function and balance by a general, broad consideration of the intimately existing relationship of these four organs. In defense of a hoarsely marked personal case of laryngitis Dr. Clifford branded the same as an extremely acute infection of but a few hours standing. He remarked that a diaphoretic was all he needed, or two of them, and probably a tub of ample diameter to serve as a receptacle for a combination of feet and mustard-water.

Dr. W. J. Walker, under the caption of "Clinical Manifestations of Septic Joint Infections," presented the history of a patient whose recovery followed an attack of pneumonia plus a succeeding infection of the right knee. To prove beyond question to the society that he had survived both the infection and the treatment, the patient was presented.

Dr. J. L. Marchand, from the store-house of an observant memory, related the intimate histories of four cases of septic joint infection with their treatment by vaccines.

At the May meeting Dr. John L. Marchand took up what was purported to be an elementary consideration of "Immunity." This paper is backed up by an infinite amount of evidence collected in the course of his work which is and has been more or less directly along this line. He has, it may be said, dissected the subject and presented it in an altogether different garb and in the new presentation he has not hesitated to express his own feelings, findings, and proofs in the matter. This paper will soon appear in the medical press where we bespeak its attracting a vast amount of attention. The local society is anxiously awaiting its appearance that it may be given mature study and consideration. Without doubt this particular paper represents the net results of an immensely large clinical experience which has widely covered the infections, and its writer has not hesitated to declare the new evidences which to him seem to have proven themselves true in the course of his everyday work and observation.

Discussion of the subject matter was rather of the halting, hesitating kind. Generally speaking, members felt themselves to be drifting in rather deep water while discussing immunity but the consideration of the clinical usage of bacterins gave a wider scope to individual expression of opinion; another case of the application of a therapeutic measure before its physiological action is thoroughly worked out and explained.

D. Allison Walker, Reporter.

YORK—May, June.

The York County Society met in regular session in the parlor of the Colonial Hotel, May 6, at 1 P.M., Dr. Shatto presiding and Dr. Eisenhower acting as secretary-reporter *pro tem.* Forty-five members were in attendance.

The report of the Committee on Public Policy and Legislation, relative to the protection plan proposed by the Northampton County Medical Society, was read by Dr. Long and unanimously adopted.

Regarding the matter of favoring a resolution to be framed and passed by the state society, as advanced by a committee of the Medical Society of Northampton County and referred to our York County Society as well as to all county societies throughout the state for an opinion as to the wisdom of the requiring every member of every society to pay once an assessment of ten dollars, independent of our regular annual assessment of fifty cents per member, for the purpose of creating a fund, which will be sufficient (supposedly) to fight any suit up through the court of last appeals and if a case be decided against us to pay any damage up to $10,000, with the right to lay additional assessments should the one be found insufficient, your Committee on Public Policy and Legislation pray and urge that every effort be made by all members of all county societies to stay this proceeding at once. Your committee believes it is originated and being advanced by men with the best intentions. This move, however, is based on the assessment principle, as was our present fund of fifty cents, and is a mathematical impossibility, a guess, of sufficiency, gentlemen, not more.

We are willing to go on record as saying that should the state society consult an actuary whose character and ability were unquestioned the above statement would be corroborated, and certainly for the state society to pass such a resolution as the one indicated without consulting a first class indemnity actuary, would be suicidal.

For the state society to have a defense fund sufficient to do as is indicated would cost each member in reality just about the same as first class insurance companies are now offering. Your committee further wishes to impress the inequality of this measure; namely, that many of the members of all county societies, though loyal and good physicians, live up to their incomes and can not be prosecuted as they possess no property, hence are not in need of protection. Yet this class would be forced to carry insurance for others who can well afford to carry their own protection which they need to care for the accumulation which they have been able to secure.

For the doctor who needs protection for damages there exist plenty of good companies, which, for a fee of twenty-five dollars a year will give ample defense, and to a physician in need of such protection this is not too high. For the doctor who does not need protection, twenty-five cents is too much.

It is also the opinion of your committee that should a resolution as the one named be passed by our state society, the loss of members by resignation would be so great as to deprive the state society of many good members, who would feel wronged, and that they had been driven out from their affiliation with an organization they once loved. The history of our present fund bears out our argument, as each year it is less able to meet the demands.

In the little circular issued favoring the Medical Defense Fund in answer to the statement made by our capable and far-seeing state secretary, Dr. Stevens, that it is unwise for the society to pay judgments, as it would be a temptation for a jury, knowing the defendant does not have to pay but that a large state society with plenty of money is his backer, to give an award to the prosecution, the friends of the measure reply that no jury decision will be accepted and every case lost in the lower court will be taken to the "court of last resort." This, however, is not an evidence that we would win, and is but another guess and will not necessarily bring the desired end.

To accept this unequal resolution as a part of our state society laws would require such an assessment as is spoken of quite often and will be a measure that will create such disaffection in our ranks as to greatly handicap our present pleasures and usefulness.

Signed:
G. E. Holtzapple.
A. A. Long.
J. C. Atkins.

A paper on "Gout," forwarded by Dr. Small from San Francisco, was read by Dr. Eisenhower. Dr. Gilbert read a paper on "Gout," and Dr. C. H. May read a paper on "Acidosis." The papers were thoroughly discussed.

The York County Society met in regular session in the parlor of the Colonial Hotel, June 3. Dr. Shatto called the meeting to order at 1 p.m., and despite the very unfavorable weather, almost fifty physicians were present. The committee appointed to seek a permanent home for the society and its library made a very favorable report, which will receive final action at the next meeting. Resolutions relative to Dr. Niles H. Shearer of York, who died May 5, were read and adopted.

Dr. J. P. Crozer Griffith, professor of diseases of children in the University of Pennsylvania, conducted a most instructive clinic, lasting over two hours. In his characteristic easy manner, he demonstrated the patients brought before him, although he had seen each child for only a few moments before the clinic hour. The diseases demonstrated included cases of rachitis, infantilism, unresolved pneumonia, overfeeding, congenital double hydrocele, hemichorea, chronic diarrhea, enuresis, vulvovaginitis, congenital heart disease, and pneumonia with sympathetic pain in abdomen. Each case was discussed *per se*, and then employed as a type for a general discussion of the disease it represented, thus providing an opportunity for a general clinic in association with a didactic lecture. Dr. Griffith extended his liberality by answering numerous questions during the progress of and after the clinic, which made the day a most profitable one. By a unanimous vote, the distinguished clinician was given a rising vote of thanks, and elected to honorary membership.

The thanks of the society was extended to Dr. J. H. Sieling for his liberal contribution of medical books to the society's library.

Julius H. Comroe, Reporter.

NECROLOGY.

IN MEMORIAM—JAMES P. BRALLIER, M.D.

(The following was adopted by the Huntingdon County Medical Society December 10, 1914.)

The Huntingdon County Medical Society records with deep sorrow the loss of one of its esteemed members, in the person of Dr. James P. Brallier, who was killed in an automobile accident on October 18, 1914.

A man in the prime of life with a professional career of wonderful possibilities, it seems that his end was indeed untimely. Few men of our society will think of James Brallier to-day, and the many days still in the future, without the sober, the silent tear. None was better loved. It was not that he was the careful, conscientious practitioner, ever striving for the attainment of one great object, scientific achievement, but rather was it because with his rare gifts of mind were combined those human traits which are attractive in men. It was the rare privilege of some of us to know Dr. Brallier and be intimately associated with him for a number of years. No man enjoyed or appreciated genuine humor more than he and none knew so well the meaning of good fellowship. His good nature was infectious, his smile a benediction. In his passing away he is mourned by his fellow physicians, no less sincerely than by the members of his immediate family.

Our society has sustained a great loss. He was rarely absent from its meetings, faithful in the performance of his duties, diligent in promoting the society's interests and a zealous guardian of its dignity and honor. He was held in high regard by his fellowmen and enjoyed the love and respect of his brother physicians. Our sympathies are with his bereaved brothers and sisters and we hereby tender them this evidence of our respect.

Resolved, That this memorial be recorded in connection with the minutes of this meeting.

C. G. Brumbaugh.
R. R. Decker.
J. M. Beck.

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THE CANCER DECALOGUE.

1. Do Not Cut across a Cancer and Leave Part Behind. The part remaining will grow more rapidly than if you had left it alone altogether.

2. An Operation for Cancer Is an Operation to Save Life. Cosmetic results are to be considered but they are not to be weighed against recurrence and death a few years later.

3. Never Manipulate a Cancer Roughly Either before or during Operation or More Often than Is Necessary to Make a Diagnosis. To do so is the easiest way to drive cells into the lymph or blood current,—hence metastasis.

4. Do Not Let a Woman Drag You into Her Delusion that Her Early Cancer Symptoms Are Due to the Menopause. The menopause is a normal physiological state and if the woman's organs are healthy she will be healthy.

5. Repair Every Cervix that is eroded, everted or the seat of a discharge.

6. Do Not Rule Out Cancer Because the Patient Is Not Old. About ten per cent. of cancers occur before thirty-five.

7. Do Not Tell Your Patients They Have Cancer if You Are Sure They Will Follow Your Advice at Once. If they are inclined to delay tell them frankly what they have and what will be the consequence of delay. If they make their own choice let it be done with full knowledge of facts and prospects. Tell the Relatives or Friends in Either Event.

8. To Save Your Patients from Cancer Save Them from Delay. Do not wait for pain and cachexia, the signs of impending death.

9. Do Not Admit that Incurable Cancer Is Unrelievable Cancer. Ligation, cautery, palliative removal and proven physical methods may change distress to comfort and add months or years. The patient who appeals to you for relief is the one to be considered,—not reputation or "the effect on the community."

10. Be Always on the Watch for Early Suspicious Symptoms. Be prompt to follow them to a definite diagnosis. Be courageous enough to insist on immediate proper treatment.

ORIGINAL ARTICLES.

THE ORGANIZATION OF NATIONAL AND LOCAL FORCES IN THE CAMPAIGN AGAINST CANCER.

BY CURTIS E. LAKEMAN,
Executive Secretary, American Society for the Control of Cancer, New York.

In his invitation to contribute to this number of the Journal, the editor suggests an article on the "Relation of the American Society for the Control of Cancer to the various state committees working in this field." The opportunity to make such a statement is doubly welcome at this time, when many state medical societies and journals are taking such an active interest in the cancer campaign. If indeed a clear understanding can be reached as to the most effective division of functions and duties among the various organizations, national, state and local, interested in this subject, a long step will have been taken toward the conquest of malignant disease, in so far as that ideal can be approached by the practical application of present knowledge.

THE NATIONAL SOCIETY.

The American Society for the Control of Cancer sets up no claim of priority or originality in preaching to the public the necessity of early recognition and treatment of this disease. The organization was effected under the inspiration of numerous similar movements in this country and in Europe. From the first it has been inspired only by a sincere ambition to coördinate all existing forces into a single irresistible nation-wide effort to reduce the cancer death rate by imparting the necessary knowledge and inspiring the will to believe and act upon it. Those who direct the policy of the society have no illusions that they are "called" above others to this task. They firmly believe that all sincere workers should unite in a single well-considered national movement. If the present society fail to meet the requirements of such a movement it must give place to some agency that will do so, leading the campaign against malignant disease with as conspicuous ability and success as the National Association for the Study and Prevention of Tuberculosis has directed the war on consumption.

RELATION TO THE PROFESSIONAL SOCIETIES.

While the Cancer Society found its first impulse in the work of a committee of the American Gynecological Society, the movement was broadened at its very inception by the appointment of organizing delegates from the American Surgical Association, the American Dermatological Association, the Association of Pathologists and Bacteriologists and practically all the similar special organizations which met in Washington in May, 1913, as the Congress of American Physicians and Surgeons. Definitely launched in New York on May 22, 1913, the movement received within a few months the official endorsement of the American Medical Association, the Clinical Congress of Surgeons, the Western and Southern Surgical and Gynecological Societies and a number of sectional and state organizations. All these professional bodies have endorsed the design of the national Cancer Society as expressed in its Constitution:—

> "To disseminate knowledge concerning the symptoms, diagnosis, treatment and prevention of cancer, to investigate the conditions under which cancer is found and to compile statistics in regard thereto."

RELATION TO CANCER RESEARCH.

It will be seen that this purpose comprises not only the conduct of an educational campaign but the gathering of information in regard to this disease. In what relation, then, does the society stand to the various American cancer research institutions and workers? The answer is that the society does not contemplate the prosecution or support of biological research, already so ably pursued under the auspices of our leading universities. With these workers in the field of pure science mutually helpful relations have developed. Indeed a notable collective expression of their attitude is regarded as a very corner stone of the educational movement. A few years ago the eminent laboratory students placed on record in the transactions of their official organization, the American Association for Cancer Research, their conviction that, pending the discovery of the ultimate nature and cause of cancer, a far more effective dissemination and utilization of the vast store of present knowledge of the disease is urgently called for. Formed to carry out this very object the "control" society depends upon the constant support and coöperation of the institutions represented in the "research" society. Many of the foremost American students of cancer are prominent in the membership of both organizations. Machinery is thus provided for the wider dissemination among the profession and the people of the essence of the newest knowledge of malignant disease, fresh from its laboratory sources.

RELATION TO STATISTICAL INVESTIGATIONS.

The society does, however, contemplate original work in the collection and collation of statistical data, and will expand this feature of its program as far as its resources permit. The statistics of cancer mortality need to be improved both as regards their collection and their publication. The merest suggestion by the society to the United States Census Bureau has been sufficient to initiate a notable advance in this respect. With the greatest possible interest and zeal, Mr. Harris, the late director of the Census, and his successor, Mr. Rogers, have undertaken the preparation of a special report on the cancer mortality of the United States Registration Area in 1914. The number of deaths will be stated in full detail under some thirty titles of organs and parts of the body affected, instead of, as hitherto, merely under the six general groups of the international list. The Imperial Cancer Research Fund has long urged that it is only on the basis of such detailed data for the various organs that a true conclusion can be reached as to whether or not cancer is increasing. For the first time in the United States the data will now be at hand, as they are in England and Wales, through the reports of the Registrar-General, for the prosecution of such inquiries.

The Census Bureau will also for the first time in this study make a distinction between returns based on certain and on doubtful diagnosis. To secure the additional information needed for this distinction the bureau is sending tens of thousands of letters to physicians who have certified deaths from cancer, asking whether the diagnosis was based on clinical findings alone, or was established by surgical intervention, microscopical examination, or autopsy.

All this, it will be realized is a large amount of work for even a government bureau to undertake. Much of it should be done in the first place by the registration offices and the boards of health of the several states, where the original certificates of death are filed. It will be the duty of the American Society for the Control of Cancer to urge upon the various state officials the need of undertaking this work in order to insure the permanence of the advance in the statistical study of cancer which has been inaugurated by the Census Bureau.

But the society is also interested in special statistical studies of the geographical, racial and occupational distribution of cancer, and above all in collating, upon a uniform plan, the records of surgical treatment of the disease in the leading hospitals. It is important that an authoritative answer be available for all who ask just what percentage of success is to be expected in the treatment of each phase and each stage of this multiform disease. All such studies the society regards as fulfilling its fundamental purpose and in pursuing them it is everywhere receiving the most cordial encouragement and assistance from statistical offices and from the best hospitals and institutions.

RELATION TO EDUCATIONAL AGENCIES.

The important and clearly established lessons derived from such studies of the sources of information must be given to the public. The society has undertaken to do this directly, through its publications, its regular articles for the newspapers and its lectures. But in the large view it can best secure this object by enlisting the coöperation of all appropriate existing agencies which conduct educational work. Foremost among these are the state and local departments of health, especially those which are devoting an increasing share of their energies to the spreading of the gospel of health by bulletins, exhibits and lectures. In the same category must be included the committees on public instruction which in many states are conducting admirable campaigns of health education under the auspices of the state medical societies. Toward all these agencies the society stands in the relation of the "producing" to the "distributing" end of a manufacturing business. With its wide outlook over the national field it is in a strong position to provide statistical material, to receive and pass on new knowledge, new experiences, new methods which have been found valuable in one field and should be used in others. In another view the society may take the position of "middleman" between the research workers and statistical students producing new facts about cancer at the sources of knowledge on the one hand, and on the other, the many agencies, general and local, which will bring the practical bearings of this knowledge, new and old, directly home to the people. In general, then, one of the most useful functions of the society is to act as a bureau of information and clearing house, which is at the service of all workers and institutions interested in the study and control of cancer.

RELATION TO STATE COMMITTEES.

The relation of the national society to similar movements within the various states should be clear from what has been said. In no case will the society seek to set up local agencies to parallel work already adequately organized under the auspices of state medical societies and boards of health. Provision is made for local committees to be organized under the supervision of the resident directors of the national society wherever no state or local agency is in a position to undertake the work. Such groups will not be formed, however, except under full agreement with present state agencies. Where, as in Pennsylvania, under Dr. Wainwright, and similarly, under the auspices of state medical societies, in Maine, Wisconsin, Kansas, Colorado, Louisiana, Texas and many other states, active local committees are at work, every effort will be made to assist these groups in the manner already outlined and, so far as the constitutional limits of size permit, to secure from them representative delegates to the governing council of the national society. At least one director from each state will eventually be chosen to act as a local correspondent who will inspire and stimulate work in his own state while at the same time assisting in formulating the general policies of the national society. Pennsylvania now has four members in the National Council, namely Dr. F. F. Simpson of Pittsburgh, Dr. John G. Clark and Dr. William L. Rodman of Philadelphia and Dr. J. M. Wainwright of Scranton.

RELATION TO OTHER GENERAL COMMITTEES.

It is an earnest of the good feeling and harmony with which the cancer campaign is evolving toward a single coherent national movement to consider the high degree of integration with other national agencies which has already been attained. Some of these had begun effective work long before the present society was established. Aside from such admirable local campaigns as that of the Pennsylvania Commission and the work inspired by Dr. C. C. Carstens in Michigan, the Clinical Congress of Surgeons of North America had in the field an active committee on cancer under the chairmanship of Dr. Thomas S. Cullen of Baltimore, the other members being Dr. Simpson of Pittsburgh and Dr. Howard C. Taylor of New York. This committee, as is well known, caused the publication of widely read and influential popular articles by Samuel Hopkins Adams. It is instanced merely as indicative of the get-together spirit that animates the national society that all three of these men naturally took their places as members of the executive council of the new association. Subsequently the American Medical Association appointed a cancer committee representing its Council on Health and Public Instruction, and again to avoid duplication of effort the same men were made members of that committee. Dr. Frederick R. Green, the capable executive of this Council of the American Medical Association, has been from the first a director of the cancer society, and has given invaluable advice and coöperation in its publicity campaign, printing every week in the press bulletin of the A. M. A. a popular article on cancer prepared by the society, which thereby reaches three thousand or more editors in all parts of the country.

A similar identity of committees has been effected in local fields, especially in Minnesota, and is typical of the desire to carry on everywhere a well-coördinated national campaign which shall embrace representation from all the principal local agencies and shall thus move forward with absolute harmony and unity of purpose to the accomplishment of its difficult but glorious ideal,—the progressive reduction of the mortality from this historic scourge of mankind.

PRIMARY CARCINOMA OF THE TONSIL, WITH REPORT OF CASES.

BY JOHN BOYD MC MURRAY, M.D.,
Washington.

(Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, September 24, 1914.)

Carcinoma of the tonsil is usually secondary to involvement of the tongue or pillars of the fauces. It is rarely primary. The large amount of epithelial tissue on the surface and in the crypts, the frequent inflammations, hypertrophies, and irritations to which the tonsils are subjected, rather favor primary epithelioma. The same conditions are frequently met with in the mammary gland, uterus, rectum, and gall bladder, and have been assigned as a contributing cause of carcinoma of these organs.

The infrequency of epithelioma of the tonsil may be assigned to a more staple condition of the tissue elements, or as a result of the atrophic changes which take place in the tonsil after adolescence.

Early diagnosis of carcinoma of the tonsil, as in other parts of the body, is of prime importance.

Carcinoma is a disease of advanced life. An enlarged tonsil, whether ulcerated or not, smooth or rough on the surface, should be looked upon with suspicion in patients past fifty years of age. The possibility of its being malignant should always be kept in mind.

Glandular involvement occurs early, but is not apt to occur before ulceration. It has been reported by some authorities that the glandular involvement of the neck may occur on the side opposite to the diseased tonsil. As far as the patient is concerned, to wait for glandular involvement before undertaking radical measures is too late to do much good. Do not permit the absence of glandular enlargement to lead you into the belief that the local disease of the tonsil is not malignant. Enlargement of the glands of the neck occurs very early in carcinoma of the pharynx, tongue, and mouth. As long as the disease is confined to the tonsil itself, glandular enlargement is absent.

Ulceration occurs very early, and the patient will often call attention to a bad taste or odor before you have discovered the small necrotic area that may be well under the pole of the tonsil. Ulcers may occur on any part of the tonsillar surface. They are superficial at first and extend rapidly. The edges are friable and irregular. The floor of the ulcer is covered with ropy mucus and bleeds easily. The fetor is most pronounced.

Carcinoma is described by most authorities as being rough and irregular on the surface; sarcoma, smooth. I believe this to be true when the anterior pillars, pharynx or tongue are involved. When the disease is confined to the tonsil, the surface is smooth, having the appearance of a fibroma. If the surface epithelium is the point from which the epithelioma originates, it usually assumes the appearance of epithelioma of other mucous membranes, and spreads more rapidly to adjacent structures. When the proliferation of epithelial cells begins from the invaginated epithelia of the crypts, the whole body of the tonsil becomes a firm mass, and surface indication of the disease is a later symptom.

The capsule resists the invasion but a short time, and the muscles surrounding the tonsil may become involved at an early period. The lymphoid tissue below the tonsil is particularly liable to invasion, as the capsule at this point does not come quite to the surface epithelium, leaving a very poorly protected point. The capsule being fibrous resists the invasion better than this lymphoid tissue.

Owing to the fact that the tonsil early in the disease presents a smooth fibrous appearance, it may be mistaken for a benign tumor or a deep-seated suppuration. Palpation will aid in determining whether pus is present deep in the tonsillar tissue. If palpation does not succeed, needle puncture may be resorted to.

It is during the very early stages of primary carcinoma of the tonsil, that differential diagnosis is important. The patient, even if advanced in life, will not be harmed by the removal of a suspicious tonsil, but deferring such radical measures may mean the loss of life. Sections may be removed by punch forceps to determine the character of the growth.

Pain is a constant symptom, but not severe. Discomfort from the enlarged gland is always present. Pain develops suddenly in most cases.

I had the opportunity to study two cases of primary carcinoma of the tonsil. One that terminated fatally without operation, and another that promises to be a cure, following operation and radium. The fatal case, when first seen, was mistaken for specific ulceration.

The patient was male, forty-eight years old. Right tonsil was enlarged, painful, firm on palpation, and ulcerated, with fetid odor; no glandular enlargement. Ulcerated area was extensive, involving the lower half of the tonsil. Patient gave history of doubtful lues ten years ago.

At the time patient was first seen, there were a few white spots on the anterior pillar that could not be wiped off. No doubt these were leukoplakia, but were not properly interpreted. Patient was put on specific treatment, and asked to return for observation. He did not return for two months, when the whole anterior pillar, side of tongue, lymphoid tissue below the tonsil, and part of cheek adjacent to anterior pillar were involved. It was then inoperable. The growth extended rapidly. Ligation of the external carotid was advised; this was done but had not the slightest effect. Patient died in six months from the beginning of the extension to surrounding parts. Radium was not at that time available.

Second case was that of a female, aged seventy-three, who in February, 1914, first noticed enlargement of gland under angle of jaw on left side. Other glands were enlarged on same side of neck and muscles became stiff. Throat gave no trouble until March 14, when family physician was called. The treatment applied reduced external glandular enlargement. The left tonsil kept enlarging and became painful. Patient was referred to me on April 11, on account of this tonsillar enlargement. Tonsil was about the size of an English walnut, firm and smooth on the surface, no crypts found, no glandular enlargement of the neck. Patient was seen every other day until April 28, when ulceration occurred. Patient complained bitterly of odor and bad taste; there was still no glandular enlargement in neck. Removal of the tonsil was advised; this was done on May 1, 1914.

Pathologist reported an epithelioma, with capsule infiltrated in lower part of tonsil near point of ulceration, wound healed and patient was dismissed from hospital in one week. We advised radium treatment, and insisted that it be begun at once, but it was deferred until recurrence began in the lymphoid tissue below the tonsil and lower lateral wall of tonsillar fauces. The results of the radium treatment have been entirely successful so far as can be determined by inspection of the area.

DISCUSSION.

Dr. G. C. Kneedler, Pittsburgh: Primary carcinoma of the tonsils, as Dr. McMurray has so ably placed before us, is quite rare, occurring, I believe, not more than once in two thousand cases of carcinoma of all other parts of the body, yet, as the author states, quite important to recognize early so that a cure may be possible.

Papilloma of the tonsil might be considered in the differential diagnosis. This condition however is painless, does not ulcerate, nor extend to adjacent structures. The growth is pedunculated and multiple, giving it much the appearance of a bunch of grapes. Fibroma of the tonsil is very slow in its development, does not recur, nor cause a glandular involvement, and is free from pain. The microscopic examination of a section taken from the tonsil, with a Wassermann examination of the blood, would differentiate between syphilis and carcinoma.

The complete enucleation as given by the author is no doubt the best procedure in the early stage. I have seen two cases with extension beyond the tonsil fossa seemingly cured by the galvanocautery.

WHAT DO NONOPERATIVE METHODS OFFER IN THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN.

BY FRANK CROZER KNOWLES, M.D.,
Instructor in Dermatology, University of Pennsylvania; Clinical Professor of Dermatology, Woman's Medical College of Pennsylvania, Philadelphia.

(Read before the Philadelphia County Medical Society, June 9, 1915.)

Cancer of the skin is a disease of rather frequent occurrence in dermatological practice and in clinics for the treatment of cutaneous diseases. The American Dermatological Association has tabulated a statistical report of skin conditions observed by the various members and from the year 1897 to 1909 a total of 370,000 cases were tabulated, of which 1.6 per cent. were of a cancerous nature. There were observed in the skin department of the University Hospital from 1905 to 1914, 134 cases classed as epithelioma. Reports of the United States Census Bureau show that for the ten years ending with 1909, out of every 100,000 deaths, cancer of the lip or skin caused 918 or nearly one per cent. According to Hazen, as in the severe cases of skin cancer the patients usually consult a surgeon, statistics from a dermatological point of view alone are too low, and therefore he considers a conservative estimate would be that nearly two per cent. of all skin diseases are cancerous. These few figures clearly show the importance of cancer from the cutaneous point of view.

The nonoperative treatment of the disease will be considered under the following headings: Internal treatment; prophylaxis or prevention; refrigeration; caustics; electrolysis; fulguration; Finsen light; roentgen rays; and radium.

Internal Medication. There is but one drug that offers any thought of benefit in malignant disease, and that is arsenic. Pusey believes that this medication, administered in large doses, undoubtedly has a definite effect on the nutrition or growth of the skin, and is equally certain that some cases of sarcoma of the derma have been cured by the persistent and usually heroic use of arsenic. Those dermatologists who have treated that rare form of sarcoma of the skin described by Kaposi, multiple idiopathic hemorrhagic sarcoma, can fully substantiate this fact. Some of the rest of us may be a little skeptical, notwithstanding the statement of such authorities as Sherwell and Abraham Jacobi, that this medication is of benefit in carcinoma. It is proved, however, that arsenic has, at least, an inhibitory influence in that rather rare dermatosis, mycosis fungoides, which sooner or later in practically all cases terminates fatally.

Prophylaxis. Prevention of a cancerous process is far more to be preferred than the treatment of malignancy which may have been of some years standing. The basic principle that any abnormality of the skin should be corrected so that the possible precursor of a malignant change in the integument is removed during its benignity, therefore, can not be too deeply inculcated into the lay mind. The blond type of individual, particularly those with dry skins, should avoid excessive exposure to the actinic rays of the sun. Those persons with an unusual amount of freckle formation should be especially careful in this regard, especially those tending to develop telangiectases, for it may be the beginning of that rare disease, xeroderma pigmentosa. Certain conditions, such as prolonged local irritation, traumata; the presence of warts, fleshy moles, pigmented nevi, senile lesions of the skin; the constant irritation of a pipe or cigar; and certain occupations, working in petroleum and tar products, are predisposing to malignant changes. Arsenic also if continued over a long period, usually if given in excessive amounts, may give rise to keratoses of the palms and the soles which at times progress into cancer. Prolonged exposures to the roentgen rays, particularly in investigators, have terminated in malignancy. Warts, moles and nevi are so readily removed by trichloracetic acid, electrolysis, carbon dioxid snow or fulguration that there seems scarcely an excuse for those not undergoing these simple measures. The "old age changes in the skin" (keratosis senilis), to which any one after the age of forty is liable, can be easily eradicated by the means mentioned or in the beginning a sulphur and salicylic acid ointment is effective. The occasional or routine use of oils, even of such a bland substance as olive oil, and absolute cleanliness of dry skins and those unusually sensitive or those indulging in irritating trades is helpful. It also does not seem a great hardship to suggest the avoidance, in so far as it is possible, of local irritation, traumata, excessive smoking, and a not too prolonged exposure to the sun's rays.

Refrigeration. Two preparations have been used in refrigeration, liquid air and solid carbonic acid. As the former is extremely difficult to obtain, as it has to be made by a skilled chemist and with expensive apparatus, and a supply can only be kept a few days because of rapid evaporation, carbon dioxid snow has almost entirely superseded it. The snow should be applied only to the most superficial epitheliomata, because it has but limited curative properties in this disease. Long freezing, with a considerable amount of pressure, is required and usually several applications are necessary. Low has successfully treated eleven cases of rodent ulcer by this means. This method is used preferably in combination with the x-rays, the former destroying the superficial portion of the growth and the latter the deeper portions. Solid carbonic acid is advocated in the treatment of this disease, however, by very few.

Caustics. It might be wise to give a short description of how caustics act. Robinson (quoted by Pusey) makes the assumption that an epithelioma is divided into three zones; a central area, A, which represents the growth visible to the unaided eye; around A, a zone B, in which carcinoma cells may be found but are not observed macroscopically; surrounding this is a third area, C, in which perhaps some carcinoma cells are present, but beyond which area it is unlikely that the disease has spread. He then describes the effect on an epithelioma of a caustic such as arsenous acid:—

> "All of the tissue within A has been destroyed, deprived of its vitality, and also some of the tissue beyond A on account of the very intense inflammatory process there, the tissue being much more vulnerable than normal tissue on account of the injury received from the epithelial invasion; hence the completely necrosed tissue always appears to embrace a larger area than the epithelioma seemed to occupy when seen by the naked eye. Beyond this completely necrosed area the inflammatory process becomes less and less intense the less the tissue is invaded by the epithelial cells, but if the caustic has been applied for a long period the inflammation will be sufficiently intense to destroy all pathologic epithelia as far as B, and almost without exception as far as C; that is, the disease is removed as completely as if the incision by the knife had been made at C, although the normal tissue has been destroyed not even as far as B. Of course the favorable action extends in depth as well as outward in all directions from a center. The proof that the outlying epithelial cells are destroyed consists in the fact that the disease rarely reappears after such a condition of necrosis and inflammation has been produced.
>
> "The destruction of these outlying cells depends, in my opinion, first, on the existence of the acute inflammatory process destroying the pathologic tissue quicker than it does normal tissue, according to a general law in pathology, and especially so in this instance, as the pathologic epithelia lie in the lymph spaces and can, therefore, be vigorously acted upon by the inflammatory lymph, thus changing quickly and very greatly the previous condition under which they lived. . . .
>
> "To repeat somewhat: From the proper action of this caustic, the same result as regards removal of the disease is obtained as if all the tissue within C had been removed by the knife, although normal tissue has been taken from a less area than that included within B; that is, that the caustic is in suitable cases a more conservative agent than the knife, and therefore it should be employed in all cases in which it is an efficient one and deformity is to be avoided as much as possible as in all face cases, for example, especially in cases of nose epithelioma. It must not be forgotten also that this method of treatment enables the surgeon to to destroy the sometimes deep-lying cancerous tissue that can not be excised for some reason or other."

As our aim in the treatment of skin cancer is destruction of the diseased area, only those caustics should be employed which have some depth to their action. Therefore the nitrate of silver, carbolic acid, trichloracetic acid, and pyoktanin which are superficially destructive could hardly be considered unless in association with other means. If the growth to be treated is somewhat elevated curetage is frequently of use before the application of the caustic. The preparations which are advocated in the treatment of this disease are the strong chemical caustics such as caustic potash (potassium hydroxid), zinc chlorid, and arsenous acid. VanHarlingen is a strong advocate of caustic potash, which is usually applied in the stick form and after a momentary application the area treated is neutralized with acetic acid. This application almost invariably goes deeper than is expected and should therefore be applied with great care. If used in the neighborhood of the ala nasi, perforation into the nose has to be carefully guarded against. If the depth of action has not been sufficient, another application may be made or the effect is increased, if followed by the application of a forty per cent. pyrogallol plaster. Sherwell has found a sixty per cent. acid nitrate of mercury solution effective in this disease. Robinson has been the greatest advocate of arsenic which is usually applied in the form of Marsden's paste, two parts of arsenous acid and one of mucilage of acacia, or equal parts of the two, using sufficient water or a four per cent. cocain solution, to make a thick paste at the time of application. This paste is applied on surgical lint and allowed to remain in contact with the growth for twelve to thirty-six hours, depending upon the depth of action desired. Zinc chlorid is used in the strength of from fifty to seventy-five per cent.; Bougard's paste is usually employed. The application usually remains on the growth for from twenty-four to forty-eight hours. It destroys generally tissue about one to two times the thickness of the layer of paste.

Arsenic apparently has a greater affinity for morbid than for normal tissues, a peculiarity which the other caustics do not seem to possess.

As a general rule applications of these caustics should not be applied to areas larger than a half-dollar.

Electrolysis. The electric needle has a very limited field in the treatment of epithelioma. If this method is employed its use should be limited to very superficial growths not larger than a large pinhead. The current employed is on the average five milliamperes in strength.

Fulguration. Fulguration, or the Keating-Hart method of high-frequency sparks consists in the application of long and powerful sparks for the destruction of diseased tissue. Four steps are frequently carried out in the treatment of small ulcerative epithelioma. First, several sparks are applied, producing blanching of the tissues and a marked degree of anesthesia; then more powerful sparks are applied, softening the tissues; the tissue that has been treated by the sparks should next be curetted and enucleated, and the same powerful sparks are applied to the site of the growth which has been removed, to remove any trace of the neoplasm. The curetting portion of the process is frequently eliminated. Fulguration should be limited to small superficial skin growths or those small keratoses or epitheliomata on the mucous membranes of the mouth. The roentgen rays is an important addition to this method of treatment.

Finsen Light. This form of phototherapy has had a comparatively slight use in the treatment of epitheliomata. Bie reported sixteen cases showing a good proportion of satisfactory results. Finsen regards it as most satisfactory in those cases which are superficial and well demarcated. These observers advocate about thirty exposures, lasting one hour each.

Roentgen Rays. Dalous and Lasserre have recently carried out some interesting studies on the effect of x-ray exposures upon epitheliomatous tissues. They discovered in their careful histopathological studies that the roentgen rays exerted a special action upon the cells of the germinative layer; therefore, those epitheliomata which are derived from this layer (baso-cellular epithelioma, tubular cancer, rodent ulcer) should respond to this means more readily than those derived from the cells of the superficial layers of the epidermis (spino-cellular epithelioma, "lobular cancer").

Pusey has written an instructive paper which recorded a series of cases of epithelioma treated by the x-rays more than three years ago. He did not include in his list epitheliomata which at the time of beginning treatment were complicated by demonstrable carcinoma in the neighboring glands. He has not, however excluded any case in which glandular metastases developed after treatment was begun, fortunately he had no such accident. He has not excluded any cases where the spread of the disease has been by continuity. The list, therefore, includes many hopeless cases in which there had been wide involvement of the orbit, other cases with deep destruction of the tissues of the face from the spread of the lesions originally involving the nose only, and other extensive and very destructive cases. The series consisted of 111 cases, of which eighty of the patients remain well to-day, or have died without recurrence of epithelioma. Of these eighty cases, forty-one were primary in regard to operation, thirty-nine had recurred after previous radical treatment, usually operation. Of the thirty-one cases which were classed by Pusey as not entirely successful, twenty-eight were cases which had failed of relief under other forms of treatment, only three were primary cases. The last three were all carcinomata involving the orbit and were inoperable. Therefore, counting these thirty-one cases as failures, seventy-two per cent. gave successful results.

It will thus be seen that if Pusey had selected his cases the results obtained would probably have been all successes and no failures. During the last ten years we have treated over one hundred cases of epithelioma, with the x-rays, in the skin department of the Hospital of the University of Pennsylvania, and over fifty cases have been subjected to this measure in the dermatological clinic of the Pennsylvania Hospital. I have personally used the roentgen rays in my private work during the last ten years in the treatment of this condition. I am glad to pay a tribute to this therapeutic measure and state that the results, in selected cases, have been uniformly excellent. Formerly it was necessary to know the coil and the character of the tube and the exact shading of light in the latter, in order to obtain results. Now, however, with the amperemeter, the milliamperemeter, the Sabourand or Holzknecht pastilles, Benoist radiochronometer, Bauer qualimeter for measuring the proper dosage, the vacuum regulator on the larger machines, the new hydrogen gas tube and the Coolidge tube in which the vacuum may be made constant, all have combined to make roentgen therapy an exact science. Although the majority of dermatologists still use the fractional dose method of treatment, the advocacy of MacKee of the massive dose method is growing in favor.

Radium Treatment. Wickham furnishes the following summary of his opinion regarding the action of radium on cancer: It causes an undeniably destructive modification of the malignant cells; malignant tissues display a special and very selective susceptibility to the influence of radium; this destructive action extends to a depth varying up to nine centimeters, according to the dosage used and the sensitiveness of the neoplasm; this action, even to the depth mentioned, occurs with the maintenance of the relative integrity of the normal tissues traversed; the action, nevertheless, is not complete enough to warrant the use of radium as a primary therapeutic agent in any form of operable cancer, with the single exception of cancer of the skin. The Radium Institute of London reported 101 cases of cancers of the skin treated by this measure during the year 1912. The institute, inasmuch as it is not permissible to consider cancer as cured until three years have elapsed, mentions those cases which are apparently cured instead of dogmatically calling them cured. Of 101 patients with slow-growing, benign cancer of the skin, thirty-one were apparently cured, forty-one improved, and twelve did not improve.

Choice of Nonoperative Methods. The personal equation governs considerably the treatment of epithelioma employed by the dermatologist. Personally, I agree thoroughly with Pusey, that there are no results obtained with radium in this disease which can not be duplicated with the roentgen rays, particularly with the improved technic now at our disposal. The *x*-rays have certain advantages over any other form of treatment; the exposures may be short, the surface is unbroken, it is painless, it can be used in locations or on extensive areas where operation could not be employed, no bandages or dressing need be worn, and the cosmetic results are excellent. Caustics are extremely painful, with the exception of caustic potash with which the pain stops upon neutralization, continuing during the few or many hours of application. The reaction with the arsenical plaster causes great swelling, closing the eye, if applied any where near the orbit. In using these caustics a dressing has to be worn for several weeks until the eschar separates and the wound heals. A great many patients rebel at the thought of the knife, at disfiguring themselves with a facial dressing to be worn for several weeks, and therefore, owing to the great expense of radium, the roentgen ray treatment for suitable cases of cutaneous cancer, those without glandular enlargement or mucous membrane involvement, is the natural deduction.

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DEEP ROENTGEN THERAPY.

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(Presented by invitation, with lantern slide demonstration, before the Allegheny County Medical Society, December 15, 1914.)

Deep roentgen therapy applies to the treatment of diseases located beneath the skin by means of the roentgen rays. This includes: (1) Deep-seated malignant disease such as inoperable, recurrent, and metastatic carcinoma of the breast, epitheliomata that have invaded the deeper tissues, carcinoma of the uterus, gall bladder, stomach, bowel and omentum, etc.; (2) gynecological conditions such as uterine fibroid and metropathic hemorrhages; (3) sarcoma involving bones and subcutaneous tissues; (4) glandular hyperplasia such as Hodgkin's disease, lymphosarcoma, tubercular adenitis, leukemia, goiter, and hypertrophy or persistence of the thymus gland.

It is obviously impossible to cover each phase of this subject thoroughly. However, the theory of the action of the rays, and the general principles governing the technic and results of the treatment can be reviewed together with illustrative cases, so that the general practitioner may know what results may be expected and how and why they are obtained. I believe the more exhaustive presentations of special phases of this subject can be better done before the various special organizations.

Deep Roentgen Therapy in Gynecology. The term deep roentgen therapy has been especially associated during recent years with the treatment of uterine conditions and particularly uterine fibroids. The results have been so remarkable as to attract the attention of the general profession throughout the world. America has been the slowest in this recognition. Even now some gynecologists antagonize the treatment as if it were an encroachment instead of an assistance.

My experience in the treatment of uterine fibroid with the rays extends over a period of eight years. During this time forty-four patients have been treated. In none has malignancy developed. None has died, nor are any suffering from complications. One patient, who was very anemic and who had a fibroid which extended to the umbilicus, had this fibroid reduced to the size of a small orange with the disappearance of all other symptoms. Then a pelvic abscess developed from some cause and I recommended an operation. She was otherwise in good condition, her anemia was overcome and the operation was a success. By stopping hemorrhages she was in better condition for operation than she would have been before the deep roentgen therapy. She, therefore, lost nothing but, I believe, gained by the treatment. In this case the abscess was probably present at the beginning of the treatment, and belongs to the group which we avoid treating if the diagnosis can be made. It does not follow, however, that the patient is going to die if deep roentgen therapy is used, and if later an operation is decided upon.

Another patient was operated upon within a few weeks after beginning treatment and before any good effects could be expected.

Another patient who was very stout, and young (aged thirty-three) discontinued treatment before she was well. At present, four years later, she is having normal menstrual periods and, except for constipation, is feeling well. This is another type of case in which we do not advise treatment.

One other patient, a colored girl, aged twenty-two, who developed gonorrhea and became pregnant, had to be returned to the gynecological department for treatment.

All the other patients are well and happy, except those still under treatment. Therefore, the high death rate and bad results which have been predicted do not materialize.

If malignant disease can be recognized in an operable stage we do not advise roentgen therapy, but it does not follow that if it is not recognized and the patient is treated by roentgen therapy that the patient will die. We are expected to and sometimes do obtain good results in inoperable cases of carcinoma of the uterus; then why must we conclude that the patient will die if she is treated by roentgen therapy before the disease can be recognized.

Miller, writing from Krönig's clinic in Frieburg, reports that, from a study of 180 patients operated upon for uterine sarcoma, seventy-nine per cent. were not cured, while his estimate of the probabilities of death following deep roentgen therapy in sarcoma of the uterus is only eight tenths per cent. Therefore we need not conclude that just because sarcoma can not be absolutely eliminated in a case of fibroid that the patient must be operated upon.[1]

If the indications and contraindications, which I have recently outlined before the American Medical Association, are followed, there will be little cause for regret. They are as follows:—

Indications in hemorrhages due to myomas: (1) All cases of myoma in older women in whom there is already a well-advanced anemia, which may be the cause of an anemic heart.

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[1] For detailed results, technic, etc., see my previous reports, "Roentgen Therapy in Gynecology," *New York Med. Jour.*, June 25, 1910; "The Treatment of Uterine Hemorrhage by Means of the Roentgen Rays," *American Jour. of Obstetrics and Diseases of Women and Children*, Vol. LXVII., Nov. 5, 1913; "Roentgenotherapy in Uterine Hemorrhage," *Jour. A. M. A.*, Aug, 22, 1914, Vol. LXIII., pp. 628-633.

(2) All elderly and young women with myomas, in whom there is marked organic heart disease, diabetes mellitus, chronic nephritis, marked lung disease and goiter with cardiac symptoms. (3) All patients beyond the age of forty, in whom there is no contraindication to the treatment. In general, the older the patient and the nearer she has approached the menopause, the more prompt and satisfactory will be the result; under forty, roentgenotherapy is not the method of choice, but good results can be obtained, though the younger the patient, the more treatment will be required. (4) The intramural or the interstitial variety of tumor gives the best results.

Contraindications: (1) All cases of myomas in which the tumor is pedunculated, or which can be excised without destroying the reproductive powers of the patient. (2) Fibroids that have undergone malignant degeneration, or that have become gangrenous, should not be treated. (3) Fibroids associated with disease of the adnexa. (4) Fibromas which are producing such marked symptoms that the patient is endangered more by waiting two or three months for results of roentgenotherapy, than by the result of an operation.

Carcinoma of the Uterus. I desire to make it quite clear that in any case in which carcinoma of the uterus can be recognized in a stage in which the disease can be completely removed surgically that such operation is the best method of treatment. Even in these operable cases it is advisable to use deep roentgen therapy after the operation to reach any outlying cells or glands which may have escaped the attention of the surgeon. I must also repeat, what I have often said before, that if there is any cause for postoperative treatment it is because of the assumption of the presence of malignant disease, and therefore the treatment should be given with the same skill and thoroughness that would be used if diseased tissue were known to be present. Without this assumption there is no reason for treatment.

Sometimes inoperable cases can be made operable. In most instances the patients can be made comfortable and their lives prolonged. Several patients that I now have under treatment certainly have shown improvement.

Amann[2] states that he has applied roentgen therapy in fifty-two cases of uterine cancer. In the thirty-one absolutely inoperable cases of cancer of the cervix, five of the patients were completely or nearly cured, twenty-nine per cent. thus being restored to health when they had been absolutely doomed before. The improved technic accomplishes this; besides, without danger of roentgen burns even with the far more extensive dosage, while the action on the cancer cells is more destructive. But it is indispensable to recognize and utilize the facts that only certain types of rays are the biologically effectual and harmless ones, and that different tubes and apparatus and even the same tube under different conditions generate entirely different rays. When the rays are applied both from front and back to act on an advanced cancer of the cervix, they act on the entire region, all the lymph glands and adjacent tissues feeling the effect, and thus a more thorough clearing out of the malignant disease is possible, he declares, than could even be realized by operative measures. In one case he had removed a cancer of the cervix three years before and a recurring tumor a year later. Again a tumor as large as a fist developed in the pelvic connective tissue but this was treated with intensive roentgen exposures and a complete cure followed. The sciatica-like pains and the contracture of the foot from pressure on the nerves vanished and the patient gained in weight. She was in good health for a long time but later died suddenly without recurrence of pelvic trouble. Amann's experience has been so favorable that he thinks the improved technic for roentgen therapy might be applied even in operable cases.

Malignant Disease Elsewhere in the Abdomen. The results obtained by the improvements in technic, during recent years, have led us to hope for improvement even in carcinoma located elsewhere in the abdomen, and in this field we have had some encouragement.

In only one case have I seen good results in carcinoma of the stomach.

In a case of carcinoma of the gall bladder and liver, in which Dr. Laplace did an exploratory operation three months ago, a time at which the disease was found so extensive that nothing was taken away, and the patient was bed-fast, three series of twenty doses each were given a month part. The patient's strength is increased, his jaundice has nearly disappeared and he has returned to business. The palpable tumor mass has slightly decreased.

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[2] Abst., *Jour. A. M. A.*, Oct. 10, 1914. *Munch. med. Woch.*, Berlin, Aug. 4, LXI., No. 31, pp. 1713-1768.

In a case of metastatic carcinoma involving the omentum there has been decided improvement in the patient's strength, comfort and in reduction of the size of the tumor.

In another patient, upon whom an exploratory operation had been done by Dr. Barton Cooke Hirst and in whom the extensive malignant disease was found involving all the abdominal viscera, there was almost complete disappearance of the tumor tissue, so far as palpation could be determined, when the patient was examined by him a year later.

In a similar case, the patient was operated upon by Dr. Deaver, for intestinal obstruction, and referred to me on October 30, 1907; she was living and enjoying fairly good health on March 4, 1914. She still, however, has attacks of intestinal obstruction.

I believe that these results hold out some hope for inoperable cases, but that they should not stand in the way of operable cases of malignant disease in the abdomen.

Recurrent and metastatic carcinoma of the breast and primary inoperable carcinoma of the breast have been previously dealt with by me.[3] I can say briefly that the results in both these fields are distinctly more encouraging than they were at the time of making the previous reports.

Sarcoma of Bone. This subject has also been previously discussed by me. Fortunately in this field one is able to follow the successive stages of the healing process by means of successive roentgen examinations. I am glad to report that all of the patients described as cured in my previous report still remain well.[4]

Glandular Affections. The treatment of Hodgkin's disease and leukemia often give brilliant results, but rarely permanent ones. In exophthalmic goiter the results both in my own hands and those reported in literature are quite satisfactory. The patient's general symptoms disappear, but if of long standing the exophthalmos and the enlargement of the thyroid do not completely disappear. Care must be taken in these cases not to replace hyperthyroidism by hypothyroidism.

Theory of the Action of the Roentgen Rays in Deep-Seated Roentgen Therapy. In general the effect of the rays is first noticed on the embryonal, malignant, and glandular cells, or in other words those most highly specialized. In general the rays cause an atrophy of the tissues in proportion to the amount and the time during which the rays are used. Upon carcinoma cells this effect is obtained earlier than upon the surrounding tissues, because these cells have a lower vitality and are more highly sensitive to the rays than the surrounding tissue. Under the microscope they are found to undergo granular degeneration. These granules are then eliminated with the other waste products of the body. By this atrophic effect of the rays on the glandular cells, hypersecretion is controlled. This explains the effect in exophthalmic goiter.

Technic. Generally the object is to produce an effect upon the diseased tissue without damaging the surrounding healthy tissue. This requires keen judgment, a great amount of skill, and good equipment. One must first know the character of the disease treated and, so far as it is possible, its exact distribution. Good judgment is then necessary to enable one to attack this disease according to its location without damaging the neighboring organs, particularly the glandular organs. Keen judgment is also necessary to determine the amount of treatment which will destroy the disease and yet not damage the body. Skill is required in order to administer rays that will reach the deep-seated disease and not be absorbed in the superficial or overlying tissues. Therefore, the mere possession of good instruments is no more of a guarantee of success than is the possession of good surgical instruments a guarantee of success in an abdominal operation.

The exciting instrument should give a uniform current of high voltage, and sufficient in quantity to excite any given tube to a high degree of efficiency. In general, any type of exciting apparatus can be used if the proper balance is maintained between the amount of current used and the proper degree of penetration of the rays from the tube, with a corresponding duration of the treatment. Therefore, the induction coil, transformer type of inductor or the static machine can be successfully used.

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[3] "The Treatment of Recurrences and Metastases from Carcinoma of the Breast," *Surgery, Gynecology and Obstetrics*, January, 1914, pp. 90-95; "Inoperable Primary Carcinoma of the Breast," *New York Med. Jour.*, April 26, 1913.

[4] "The Healing Process of Osteosarcoma Under the Influence of the Roentgen Rays," *Jour. A. M. A.*, Aug. 23, 1913, Vol. LXI., pp. 547-552.

The tube should be one that will keep a constant high vacuum of from 7 to 8 Benoist. If the tube is allowed to get soft, the rays will be absorbed in the superficial tissues, resulting in a burn, and the deep effect will not be obtained.

The most practical distance of the target of the tube from the skin of the patient, with our present type of holder and present shape of tubes, I have found to be eight inches.

The field of application of the rays is over the diseased area. The rays should be confined, as much as possible, to the area treated. If a rapid result is desired large doses must be given, and since one must not exceed the tolerance of the skin over any particular area, the field of application must be subdivided in such a manner that by cross-firing, an increased dose will reach the deep tissues without affecting the skin. It is this subdivision of the skin area which has enabled us to give much larger doses into the deeper tissues at one time. It, of course, requires correspondingly longer time to give multiple doses than to give one dose. When it is possible to give these on one day it saves the patient time, travel and expense.

The time required to give any particular series of treatment or any particular dose will depend upon the character of equipment and the technic of the individual operator, as well as upon the condition and circumstances of the patient. The interval between any series of treatment should not be less than three weeks.

Filters should be used to cut off the rays that are mostly absorbed by the skin. For this purpose the leather filter, first recommended by myself,[5] has served well. On top of this I can add for this deep roentgenotherapy three millimeters of aluminum, and I place these just above diaphragm of the tube stand.

At present under these filters I give, through each area of skin treated, 20 X. Therefore, it will be seen that when one gives twenty such doses the patient is receiving 400 X, and the deep-seated disease is receiving probably as much as any area on the surface.

CONCLUSIONS.

1. Good results may be expected from the treatment by deep roentgen therapy in fibroid of the uterus, metropathic hemorrhages, and in some other gynecological conditions.

2. Deep-seated malignant disease should be operated upon if it is discovered during a time when it can be completely removed. If there is the slightest doubt about its complete removal the patient should receive thorough, skillful, postoperative, deep roentgen therapy.

3. In inoperable malignant disease good results can sometimes be obtained by deep roentgen therapy, and in most cases the patient can be made very comfortable and the life prolonged.

4. The results obtained will depend in great part upon the skill and good judgment of the roentgenologist who gives the treatment.

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[5] Pfahler, George E.: Tr. Am. Roentgen-Ray Soc., September, 1905.

RECENT PROGRESS IN SURGERY.

BY J. STEWART RODMAN, M.D.,
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(Read before the Fifth Censorial District of the Medical Society of the State of Pennsylvania, July 29, 1914.)

In thinking of a suitable subject to discuss with you, it has occurred to me that I could not do better than to choose the very broad one of "Recent Progress in Surgery." As there has been so much that is new, I shall necessarily mention only a few subjects, leaving out others arbitrarily for lack of time.

One thing is certain: Surgery is becoming a gentler art than heretofore. We have been laboring under the false impression that anesthesia banished pain and that, no matter how rough were our manipulations, the sleeping patient suffered no ill effect. To-day Crile has made us realize that this is not the case, that anesthesia produces only a veneer through which impressions of pain-producing "work" changes in the cells of Purkinje can easily penetrate. We as practical surgeons are not so much concerned with the long years of patient laboratory work on which anoci-association is founded, but we are vitally interested in its practical application. During a recent visit to Cleveland I asked Dr. Crile at what stage of the treatment did anoci-association become applicable. His answer was: At the door of the hospital, the doorman being the first link in the chain. He meant of course that a pleasant reception was necessary and helped to put the patient in the proper frame of mind, a state of mind in which he or she must be kept during the entire stay in the hospital.

Before going further it might be well to reduce to a working basis the principles of anoci-association. As you know the term itself means an association of harmless things, therefore avoidance of all that is harmful in so far as may be possible. What then is harmful to a surgical patient? Crile and his associates have shown that various stimuli, fear, trauma and infection, for instance, produce changes in the Purkinje cells of the medulla that are constant and characteristic. These changes are an increase in chromatin or chromatolysis and changes in shape of the cell nuclei and the cell itself. All of these we know as "work" changes because any response on the part of the brain to stimuli must produce work which is a natural protection; in other words, an effort to run away from danger. It is now probable that the brain is not alone in bringing out this defense but that it is only a part of a system which Crile calls the kinetic system. The thyroid, liver and adrenals also play their part and show evidence of increased activity or work changes in response to stimuli. The clinical evidence that such a state of affairs has existed is shown by the old familiar symptom-complex of shock, so that our ideal must be a shockless operation; a brilliant mechanical procedure which sends our patients off the table with drenched clothing, a subnormal temperature and a rapid pulse will no longer do. To be right, the condition at the end of the operation must compare favorably with the condition the day before in bed. How then shall this halcyon result be accomplished, for it can be, and is not, as it sounds, an idealistic dream. First there must be no fear of operation and particularly is this important in highly nervous states, as, for instance, Graves' disease. I know of a patient, suffering from this condition, in whom a convulsion occurred upon arriving in the operating room. She was immediately sent back without the operation but died in twenty-four hours. Here is an instance where fear alone turned the scales. Under anoci-association the thyroids of such patients are literally stolen, the patient does not know when the operation is done.

Such a plan, which works so well in extreme cases, is not necessary, however, in the ordinary case, a preliminary dose of morphin and atropin being given three quarters of an hour before operation, putting the patient in a neutral state where fear is reduced to a minimum, the twilight sleep as it is called by Krönig, who has recently advocated these drugs for the pains of labor. Then we must select some general anesthetic which will be safe while toxic to the least possible degree and of course nitrous oxid best meets the indications. The same plan may be used with ether, however, and probably will continue to be in most clinics because of the prohibitive cost of nitrous oxid, unless manufactured in the hospital itself, and the high degree of skill that is necessary in its use. We must come to nitrous oxid, however, as we each can meet the requirements. And then, as said before, since the patient will still suffer, although under a general anesthetic, something to block these afferent impulses must be used locally at the wound. This can be done by injecting novocain 1: 400 solution into the skin, into the fascia and into the peritoneum, and quinin and urea hydrochlorid 1 : 600 solution around the wound at a distance of about one and one half inches from the line of incision. The effect of the novocain is instantaneous, but it takes about fifteen minutes for the quinin and urea hydrochlorid to take effect, which however lasts for approximately twelve hours after operation and thus minimizes postoperative pains. Then not the least important of all are gentle manipulation and sharp knife dissection, instead of blunt dissection as is so commonly the practice. Such a plan will not only reduce mortality but also morbidity and is readily applicable to any well-organized surgical clinic. Since beginning its use I can see marked improvement in results. One other point in anoci-association technic is worthy of mention, namely deep morphinization when infection is already present or when trauma has already wrought its havoc. Crile has shown in the laboratory that morphin will protect the kinetic system and raise the lowered threshold of the brain. This drug is given early and repeated often if necessary and exhaustion does not occur. I can also attest the value of this suggestion.

From a consideration of anoci-association one is naturally led to think of anesthesia in general. Intratracheal ether given by any one of a number of suitable apparatuses (Elsberg, Janeway, Müller) has come to stay, doing away with the necessity of cumbersome differential pressure cabinets so popular for a time in Germany. The only one I know of in this country is at the German Hospital in New York City, installed there by Dr. Willy Meyer. Such cabinets are costly and inconvenient, so that Meltzer and Auer rendered a real service in introducing intratracheal insufflation. This method of anesthesia of course makes possible surgery on the thorax, which is impossible without it because of the great danger of pneumothorax and collapse of the lung. Surgery, in the hands of Willy Meyer, Sauerbruch, Robinson and others, is now forging ahead in this field so long neglected as to be, but a short while ago, where abdominal surgery was twenty-five years ago. We can now undertake with reasonable assurance of success to cure lung abscess, bronchiectasis and even localized tuberculosis of the lungs.

Other special methods of giving anesthesia have recently been advocated, the best of these, because it seems to have a definite field of usefulness, being the colonic oil and ether of Gwathmey. He gives, as you know, a mixture of oil and ether by the bowel; through this channel it is absorbed, producing the same narcosis as when ether is given by the usual inhalation method. Its advantages are obvious, in that in operations it does away with the necessary intruding of the anesthetist about the face and mouth; it produces a smooth anesthesia and may be given in the ward before bringing the patient to the operating room. We have tried this method recently at the clinic and found that it worked well. Anesthesia, however, is somewhat more profound and somewhat less controllable than when given by the open inhalation method.

The Germans seem to be fond of regional anesthesia, *i. e.*, intravenous injection of the anesthetic. I have had no experience and indeed know of no one who is using the method in America. Spinal anesthesia is still being used in selected cases, but the increasing feeling is probably one of distrust on the part of surgeons in general. Local anesthesia is certainly gaining in popular favor.

I might have added that the lungs are not the only intrathoracic viscera which surgery is beginning to attack. We see reports of radical excision of the esophagus for carcinoma by Willy Meyer. As yet the technic has not been perfected so as to be applicable, save by those few men especially trained in thoracic surgery. But successes are beginning to appear where dismal failures were looked for and perhaps the day is not far distant when the esophagus can be not only resected but reconstructed. A successful case has already been reported by Willy Meyer in this country. That the heart is amenable to surgical interference we know from the successful cases of suturing of stab wounds reported by Stewart, Vaughan and others. About fifty per cent. of the patients in such cases may be saved if seen within a short time. And now Alexis Carrel seriously proposes to arrest the cardiac circulation by clamping the pedicle of the heart for two to three minutes while cauterizing or suturing the aortic or pulmonic valves. In fact, in his article appearing in *Annals of Surgery*, July, 1914, he reports having done this successfully in dogs, the animals living and enjoying perfect health afterwards. Some day this experimental procedure may become applicable to the human heart afflicted with inflammation of the valves or stenosis of the orifices.

I grant you it requires faith to believe that any such thing will ever be possible. Already we are confident of blood-vessel suture. The work of Carrel, Sweet and Horsley has brought it from the laboratory into the clinic where any of us, who takes the trouble first to perfect himself in the technic in the experimental laboratory, may use it. Blood-vessel suturing makes possible the saving of life, the saving of limbs or organs, and the curing of aneurysm. No better original work has been done of late than that by Matas of New Orleans who has shown us how to cure aneurysms by arresting the circulation, opening the sac and plicating it so as to restore the caliber of the artery. Within the month I saw a beautiful demonstration of blood-vessel suturing by Dr. Sweet. The patient was a man who suffered from an aneurysmal varix of the femoral artery and vein, in whom the communication between the two vessels was first clamped and then sewn. The result was a complete success, the bruit and pulsation disappeared and cure promises to be permanent. Such results modern surgery may well boast of.

In the abdomen, of course, surgeons find their happy hunting ground. Here we are given such a chance to study living pathology and physiology that it is small wonder that rapid advance has been made. Ulcers of the stomach are excised because of the very real danger of cancerous implantation or its usual complications, hemorrhage or perforation, following simple gastroenterostomy.

We note with satisfaction that in the discussion of this subject at the recent International Congress of Surgery held in New York, the prevailing opinion was enthusiastic for excision of ulcer or, as it pleased some of the speakers to call it, Rodman's operation. Mayo, Mayo Robson, Moynihan and others state that from fifty to seventy-five per cent. of ulcers eventually become cancer so that, as I have said, it is a real danger. I could not leave the stomach without paying tribute to the wonderful *x*-ray work that is being done in the diagnosis of its gross lesions. It has been my pleasure to see at first hand some of the best of it at the hands of one of its experts, Dr. Pfahler of Philadelphia. The way in which he shows ulcers, cancers, dilated or contracted stomachs by *x*-ray plates, which nearly always tally exactly with operative findings, is a revelation. Cholecystectomy is becoming more popular than cholecystostomy, because of the tendency of gallstones to reform. There is no reason why they should not, as the underlying conditions are still present after the gall bladder is drained.

In the *Journal of the American Medical Association*, July 11, 1914, Henes of New York has shown in a preliminary report that a hypercholesteremia is the underlying cause, in all probability, of gallstone diseases. The amount of cholesterin normally found in the blood is 1.48 grams per 1000 cubic centimeters of serum. In gall-bladder disease it rises to 4+ grams per 1000 cubic centimeters of serum. The spleen also is better understood and splenectomy has become the method of choice in treating splenic anemia. Dr. Willard and myself showed, by investigation in the laboratory, that occlusion of the splenic or portal veins alone will not cause permanent splenomegaly, as has been thought possible because of the frequency with which thrombophlebitis of the splenic and portal veins was found in patients dying from splenic anemia. We believe that in all probability the underlying cause will be found to be some toxin absorbed from the gastrointestinal tract. Splenectomy is also now being done successfully for pernicious anemia. One could spend hours writing of the advances in abdominal surgery alone.

The more difficult field of brain and spinal-cord surgery is also receiving attention. Resection of the posterior spinal nerve roots for the gastric crises of tabes or to relieve the spasticity of certain paraplegias, as suggested by Foerster, is promising. I have had the opportunity of performing this operation in eight cases during the past two years and am encouraged with the results. A young girl, upon whom I performed the operation for marked spasticity one and one half years ago, has recently presented herself markedly improved, and is now able to walk without assistance. I have also heard of another case operated upon at about the same time in which equally marked improvement has made it possible for the patient to leave the bed to which spastic paraplegia had confined her for two years and to walk without assistance. In four instances in which the roots were cut to relieve pain, two showed some improvement; the others were not markedly benefited, probably because not enough roots were cut. They were my early cases. Surely anything which can be done for such sufferers must be in the nature of a godsend to those who without surgery must look either to hypnotics or to permanent hopeless disability.

Nothing could be more germane to any discourse on the progress of surgery than a plea for the early surgical treatment of malignant disease. For in spite of much heralded "cure alls," surgery, complete eradication of the disease with the knife, is still the best means at hand to cure cancers. It is not, to be sure, the ideal treatment for which we are looking. Some day, perhaps in the near future, when the cause of cancer is discovered, such an ideal treatment will be developed; it may be a serum, it may be a vaccine. However, we must labor with the proven methods and I will say that a healthy optimism of curing a goodly percentage is held by some of us. The pessimist is still about, suffering from inherited views of a past quarter century more than from anything else. Since Moore of England showed us that cancer in its inception was strictly a local process it became obvious that it could be cut away completely if seen early enough.

Since it is better to prevent than cure a disease, a natural step in advance would be eradication before actual cancer has developed or in the precancerous stage. This term can not be found in textbooks on pathology but is convenient and its use fully warranted by clinical facts. What then do we mean by precancerous processes? I take it that any pathological process which by clinical records may be shown to become malignant in even a small percentage of cases is, for practical purposes, precancerous. Therefore, by learning to recognize these several conditions can we best serve those whose hosts they are and who must otherwise take the unhappy chance of developing malignant disease. We do not claim this to be anything new but we do feel that in running after false gods, as radium, we have been somewhat forgetful of surgery's value in malignant disease and therefore should be reminded. Think what it means to prevent cancer when ninety per cent. of the cases of cancer of the cervix are inoperable when first seen by a surgeon; ninety per cent. of gastric carcinomata also are inoperable; the same with twenty-nine per cent. of those in the breast, and, on account of its more rapid course, a larger number of cancers of tongue and mouth. By inoperable we mean that there is not even a reasonable chance of removing the disease. It means simply that there are upwards of 40,000 deaths from cancer annually in the United States and that probably, as in Great Britain, one man in eleven and one woman in eight dies of the disease.

Let us now take up the several precancerous conditions as they are encountered in the skin, lip, tongue, stomach, intestines, gall bladder, prostate, bladder, kidneys and breast. W. W. Keen, in a paper read before the American Medical Association in 1904, showed that warts, moles and nevi frequently undergo malignant change and that such danger is directly proportionate to the amount of irritation to which they are subjected, particularly when they exist in persons beyond forty years of age. Any such lesion which shows a disposition to grow or spread in those approaching, or at, the cancer age should be promptly removed. This admonition becomes an imperative demand if the lesion be constantly subjected to irritation, as is the case when they are situated on the face in those who shave, pick at, or otherwise irritate them, or on parts of the body pressed upon by suspenders, belts, etc. Chronic ulcers, whether simple, specific, or tubercular, are often the basis upon which carcinoma develops. It would seem that it never does so in normal skin. Every surgeon knows how rare epithelioma of the skin of the abdomen is in America, and yet it is common in Kashmir where charcoal heaters are worn on the abdomen. Chimney sweep's cancer, formerly so common in Great Britain, is becoming rare since the passage of legislation requiring long handles to the brooms employed. It is now unnecessary for the sweep to ascend the chimney. Workers in paraffin, chemicals, dye stuffs, etc., are notoriously liable to epithelioma of the hands and forearms, so much so that it has been necessary to pass wholesome and beneficent laws for their protection.

Lips. Epithelioma of the lip is frequent in men, and so rare in women as to be a clinical curiosity. I have seen many cases in men, but only a single instance of the affection in a woman, and in her it was not at the mucocutaneous border of the nether lip, where it is nearly always encountered, but entirely on the skin well above the mucosa of the upper lip. The rarity of lip cancer in American, English and European women is unquestionably due to their nonuse of tobacco, as the few cases met with have generally been in elderly women who smoked. A distinguished Irish surgeon (Ireland has always furnished a greater number of cancers of the lips than any other country) wrote[1] as follows:—

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[1] *Practitioner,* May, 1913.

"The use of the pipe is the exciting cause of lip cancer in almost every case. The disease is rarely found in nonsmokers. The few cases of epithelioma (cancer) of the lips which I have seen in women were all in peasants who smoked. The great bulk of the cases of this class in the Richmond Hospital come from the more remote parts of Ireland. In these districts the short, hot clay pipe is still smoked; while in Dublin and in regions closer to the cities, where the briar-root pipe is in use, cancer of the lip is not nearly so common. If further evidence be necessary in this direction, it may be found in the fact that patients can nearly always tell you that the cancer has appeared on the side on which they use their pipes. Another factor to be considered is the irritation caused by broken, decayed or irregular teeth. The freedom of women from cancer of the lip is notable. I have operated on over 350 cases, and have seen many others, and all were males except three. These three were Western peasants who smoked assiduously. It is not probable that sex has any direct influence; the reason why women are comparatively exempt is rather to be sought in the fact that few of them smoke pipes, and they are less subject to traumatic influences than men. Position in life seems to have some bearing on the liability to cancer of the lip. The disease is comparatively rare among the upper classes. This may be explained by the greater care they take of their teeth, and if a pipe be smoked, by the use of one not made of clay."

The lesson to be learned from one so competent to give it is to avoid the use of tobacco to excess, to use holders for cigars and cigarettes, and, if a pipe be smoked, one of clay or like material is to be eschewed. If in spite of such precautions tobacco seems to cause irritation, it should be given up.

If a leukoplakia, crack, ulcer or wart on the lip fails to improve within a fortnight under simple treatment it demands, in all persons after forty, particularly those who use tobacco, prompt excision and immediate examination by frozen sections; if found to be cancerous the submaxillary region on both sides should be explored, and, if necessary, carefully dissected.

Tongue and Mouth. Cancer of the tongue and mouth is also far more frequent in men than in women, due again to the difference in the habits of the two sexes as to the use of tobacco and alcohol, and the care or toilet of the mouth. Women are more careful of their teeth, consult dentists more regularly, and therefore less often have irregular, jagged and decayed teeth, causing constant irritation of the side of the tongue and buccal cavity in contact with them. Women in Ceylon and India, where the betel nut and leaves, consisting largely of pepper, are chewed and held in the mouth, frequently suffer from cancer of the tongue and buccal cavity. Workmen, such as carpenters, painters, carpet-layers, and others who habitually carry nails, screws, pins or tacks in their mouths while at work, are predisposed to epithelioma of the tongue and mouth. I have memory of one such case. Mayo Robson quotes Helferich, who knew of the development of a cancer in a fisherman who carried fish-hooks between his lips. The very fact that cancer nearly always begins on the side of the tongue, midway between its tip and base, clearly incriminates the teeth. Ulcers of the tip of the tongue are nearly always tubercular. A leukoplakia, a simple, specific or tubercular ulcer or wart on the tongue or inner aspects of cheeks or lips calls for even more prompt action than such a lesion on the external aspect of the lip, as metastases from carcinoma in this situation the more certainly and the more quickly occur.

They should be treated by excision or the thermocautery, preferably the former, as it will permit immediate examination of frozen sections, which are sometimes of the greatest possible assistance.

Breast and Stomach. Of precancerous lesions, none is more interesting than so-called abnormal involution of the breast. I have chosen the most modest of its many names, some of which are general cystic disease, senile parenchymatous hypertrophy, fibrous and glandular hyperplasia with retention cysts, Schimmelbusch's disease, etc. It is a common disease of the female breast and undergoes cancerous change in from thirteen to twenty-five per cent. of the cases. Warren states thirteen per cent., but our own statistics will show a probable percentage of twenty-five or even more. This disease is quite often bilateral, somewhat more common in single women, and clinically is characterized by slight enlargement of the breast, prominence of the veins, subjective pain, particularly at the menses, and objective painful indurated areas throughout the gland. There may be a watery or even bloody discharge from the nipple, the latter however being much more characteristic of intracystic papilloma. Pathologically we find on examining such breast epithelial and fibrous hyperplasia in the early stage and numerous shot-like cysts in the later stage. The contents of these cysts are sometimes clear, sometimes inky black, and we have found the latter variety of cysts to be the ones most likely to undergo cancerous change. So firmly convinced are we of the potential malignancy of abnormal involution of the breast, that we do not hesitate to remove the entire breast and even the muscles and axillary glands in a woman near or past the menopause with this disease.

Other conditions of the breast are dangerous; so much so that no tumor should be allowed to remain because of its apparent innocence. Intracystic papilloma may be considered early cancer, for nearly all become malignant. Simple cysts undergo malignant change of their walls often enough to be looked upon with suspicion, and a large percentage, one third according to Bloodgood, of benign intracanalicular myxomata will undergo malignant degeneration. Therefore our duty is clear in handling tumors of the breast. All should be removed and, whenever there is the slightest doubt as to malignancy, a frozen section should be made at the time of the operation; if the report comes back that it is malignant or even suspicious of malignancy, the radical operation should be done. By such a plan we know that we are curing sixty per cent. of cancers of the breast and hope to raise it to seventy-five per cent.

Stomach. I have already referred to the fact that ulcer of the stomach can not any longer be regarded as a simple inflammatory lesion. Virchow, that conservative and accurate pathologist, emphasized the fact that thirty-five per cent. of all carcinomas are in the stomach. We can now add that at least one half, probably more, are the direct result of neglected ulcers. I have said that 40,000 people in the United States die annually of cancer. This means then that approximately 15,000 had cancer of the stomach. There is abundant evidence that such a change occurs; as early as 1839 Cruteilhier, although recognizing the intrinsic difference between ulcer and cancer, nevertheless clearly pointed out that, in one predisposed, ulcer may be converted into cancer. Many others followed, as Rokitansky, Dettrich, Waldeyer, Potain and Zenken. Recently W. J. Mayo found that in fifty-four per cent. of cases of cancer of the stomach there was definite clinical and pathological evidence of previous ulcer. Moynihan makes it 72.1 per cent., Mayo Robson 59.3 per cent. It would certainly seem from such statistics, coming as they do from high authority, that cancer is very frequently preceded by ulcer. This therefore furnishes the chief reason for excision of ulcers wherever possible and, although no further logic is necessary, we might add that perforation and hemorrhage are also prevented and the mortality is in good hands not materially increased.

Gall Bladder and Ducts. There can not be the slightest doubt as to the close relationship between cholelithiasis and primary carcinoma of the biliary tracts, and that the latter follows, and does not precede, the former. Carcinoma of the gall bladder and its ducts is not only more frequent in females, but occurs exactly in the same ratio as gallstones are found in the two sexes. Musser's series of 100 cases of primary cancer of the gall bladder, all verified by autopsy, showed 75 to be females and 25 males. Of the number 69 per cent. had stones. Courvoisier found stones in 88 per cent. of his series; Jayle in 76; Bertrand in 93; and Brodowski in 100 per cent. Siegert found stones in 95 per cent. of primary, but in only 15 per cent. of secondary carcinomata. Mayo Robson found associated calculi in 73.2 per cent. of his operations on the biliary passages. McGlinn analyzed over 9000 post-mortem records at the Philadelphia General Hospital. Of the number 456 had cancer, and of these 11 had primary carcinoma of the gall bladder. In 8 of them there were stones in the gall bladder. Moynihan states: "Primary cancer of the bile ducts is far less commonly seen than cancer of the gall bladder." McGlinn found that, of five patients who died at Blockley with primary cancer of ducts, three had stones. Rolleston found stones in 4 out of 11 cases.

Siegert, Rolleston, McGlinn and others found calculi associated with secondary cancer of the gall bladder in a relatively small number of cases. According to McGlinn stones were present in 210 out of 254 cases of primary carcinoma of this viscus (82.7 per cent.), and in only 4 out of 26 secondary ones, or 15.4 per cent.

W. J. Mayo states: "Cancer of the gall bladder is seldom seen without gallstone irritation. It is found in about four per cent. of those cases which come to operation for disease of the gall bladder. The danger attending an operation for gallstones in the early stage does not exceed one half of one per cent. The patient with irritating gallstones appears to have eight times the possibility of death from cancer that he would have in their removal."

The lesson to be drawn from this overwhelming evidence is, I take it, that cholecystectomy should be practiced more and cholecystostomy less frequently. This was formerly not the accepted practice, on account of the frequent association of chronic pancreatitis with cholelithiasis and the difficulty of establishing the drainage necessary for its relief in ways other than through a cholecystotomy.

But good reasons must yield to better ones, and if cancer is actually present in four per cent. of the cases of gall-bladder disease, the more radical procedure is indicated. This percentage may even be increased with the microscopic examination after cholecystectomy of all parts of the gall bladder and cystic duct; in the latter situation, on account of the valves of Heister, large and irregular stones are apt to lodge and cause irritation. While I should not go so far as to advise removal of the gall bladder in every case, or as a routine procedure, it seems apparent that it properly may be done in all doubtful cases, and must be if palpable thickening and macroscopic appearances suggest either actual or potential cancer. Should chronic pancreatitis develop at any time subsequently and require a drainage operation, it must be made through the common duct. We know too much of cancer, too little of chronic pancreatitis, to accept the other alternative.

Other organs, as the kidneys, bladder, prostate, and intestines, sustain what we may call precancerous lesions. The subject is much too large to be covered at any one time. I fear that I have already taxed your patience. In closing permit me to emphasize the importance of team work, of early recognition of these conditions on your part, of the realization on the surgeon's part that even a successful operation may be followed by a prolonged period of disability, unless prevented by wise medical supervision over convalescence, which is also "up to you."

THE VALUE OF EARLY DIAGNOSIS OF CANCER.

BY WILLIAM O'NEILL SHERMAN, M.D.,
Pittsburgh.

(Read before the Clearfield, Elk and Jefferson County Medical Societies, at a joint meeting, in Dubois, June 10, 1915.)

The cancer problem with its many phases, as you well know, has been a subject for discussion since the beginning of time. While this problem has not as yet been solved, much headway has been made. The greatest advance has been made in diagnostic methods; in other words, the precancerous stages have been diagnosed while the lesion is still a local disease. If we were able to diagnose all of our carcinomas in the precancerous stage or before the cancer cells have entered the lymphatics, I feel confident that our statistics as to cures would improve by leaps and bounds.

There is no reason why cancer should not and can not be cured if we are fortunate enough to diagnose it in the very early stages or while the disease is localized. It has been only during the past few years that sufficient stress has been laid upon this important factor. One is naturally a pessimist when the past records with the end results of cancer are considered. However, I feel that in the future there is going to be more optimism, and by advances in diagnostic skill and laboratory technic, together with future possible laboratory discoveries, the time is not far off when we shall be able to make an early diagnosis in the vast majority of cases, this to be followed by radical excision. It goes without saying that the results to a great extent at the present time have been disheartening and very unsatisfactory. Heretofore, cancer has been looked upon as a blood disease. The consensus of opinion at the present time is that it is primarily local and that a cure can be secured if the growth is excised while it is still a local condition and before metastasis has taken place. If we will assume that the condition is purely a local one, is it not reasonable to deduce that the condition is curable? All clinical, operative and laboratory evidence contributes towards the conclusion that cancer is in the beginning a local affection. There is nothing in the earlier symptoms to justify the assertion that it is a constitutional condition. We have constitutional symptoms only after the tumor begins to grow. You are well aware of the fact that operations, in cases where metastasis has taken place, have failed to cure in the vast majority of cases, but have, to some extent, prolonged life. The more extensive these operations, the greater the possibility for ultimate cure. I refer to the entire excision of the growth, together with the lymphatics and glands. The great danger lies in the fact that if a few single cancerous cells are allowed to remain, there is a great likelihood of recurrence.

Let us take for illustration, a carcinoma on the floor of the mouth or an epithelioma of the lip. This condition should be diagnosed immediately because it is seen daily and there is no possible excuse for mistaking it for anything else. It begins as a crack or ulcer, or as a wart-like growth and is usually seen in individuals over forty-five years of age. If these lesions are operated upon immediately before metastasis has taken place in the submaxillary or other lymphatic glands, I believe that almost all of these cases would be permanently cured. Statistics for past generations have shown a steady improvement in the end results. This has been due to the wide removal of tissue. What is true of cancer of the lip, is true of cancer of the uterus, gall bladder, breast and other organs.

The encouraging reports in carcinoma of the stomach have been due entirely to early diagnosis. Probably one half to one third of all cancers originate in the stomach; the uterus is the only other organ more frequently affected. There is little or no doubt that the disease is becoming more common. It is well to remember that seventy-five per cent. of all cancers develop between the ages of forty and seventy, and that chronic irritation is a great causative factor. In one hundred and fifty-three cases of cancer of the stomach in the Mayo clinic, seventy-one per cent. showed preceding gross signs of ulcer, seven per cent. were suggestive of ulcer, and twenty-two per cent. gave no evidence of ulcers. The day of waiting for a diagnosis of cancer in the consulting or operating room has passed.

Let us enumerate some of the classical symptoms of carcinoma of the stomach and deduce whether or not these symptoms are of sufficient aid to enable us to make an early diagnosis:—

There is usually a history of chronic ulcer or chronic gastritis (?) preceding the acute symptoms for one or two years. Pain is usually the earliest symptom, but is seen in only fifty per cent. of the cases. Discomfort or distress rather than pain or dull ache is usually found; acute pain is not common; a gnawing pain is frequently found upon the ingestion of food. Ten to twenty per cent. of carcinoma of the stomach are painless. Other symptoms are: Flatulent ingestion with a moderate distaste for food or complete anorexia. Vomiting occurs in seventy-five per cent. of the cases, but usually late in the disease, being associated with pyloric obstruction. A putrid decomposition, which occurs rapidly in the stomach devoid of digestive juices, is sometimes found. A diagnosis can sometimes be made from this vomitus. Hematemesis is frequently found with the vomitus; blood is found in twenty-five per cent. of all cases; it is usually dark in color; in the majority of cases, the finding of occult blood in the feces is indicative of cancer.

Loss of weight is one of the most suggestive signs; so much so that any patient who is of middle age and presents this condition to a marked extent, in association with pain or distress in the epigastrium, is to be suspected of having gastric cancer. Secondary anemia from the loss of blood causes vertigo and mental dullness. The hemoglobin is commonly found to be reduced as low as thirty to fifty per cent. Fever is sometimes present; the stomach contents will frequently show a hypoacidity.

You are aware that most of these symptoms are present only after the cancer has started to grow and has produced obstructive symptoms. Unfortunately, we have, to-day, no accurate methods of diagnosing early carcinoma of the stomach so that we can say with certainty without exploratory laparotomy that there is or is not carcinoma present. If we were to have from the laboratory some such assistance as the Wassermann reaction in syphilis or tuberculin test for tubercle bacilli, for example, to enable or assist us in making an early diagnosis, I feel that operative procedures would cure a number of these lesions that have been incurable in the past.

Only after a review of this entire subject, can one come to the conclusion that the condition from a surgical or therapeutic aspect is more or less hopeless unless the disease is diagnosed in its incipiency. Wickham, in his book published in 1913, sums up his large experience with radium as follows: "Acknowledging their special and very selective susceptibility to the influence of radium, I do not consider its action complete enough to warrant the use of radium as a primary therapeutic agent in any form of operable cancer with the single exception of cancer of the skin. The radium institutes of London and Vienna concur in this opinion." The great advances made in the treatment of cancer in the past ten years have been due entirely to the early recognition of the precancerous or cancerous condition.

We know little or nothing as to the existing cause of cancer; whether it is due to internal or external causes, but it is absolutely a fact that continued irritation of any kind which causes a chronic inflammation of the epithelial surface usually precedes a cancer, and is, therefore, the most likely predisposing cause.

The educational campaign of the past few years has done much to call to the attention of the laity and profession the necessity of early diagnosis if a cure is to be secured. The frightful mortality in cancer of the rectum, cervix and bladder has, to a certain extent, been due to the delay in making a diagnosis. The majority of patients in these cases seek surgical aid after the disease has extended into the pelvic lymphatics and is beyond all hope of cure.

It is not my desire to tire or bore you by quoting cancer statistics from the world's cancer clinics, as it would serve no purpose and is irrelevant to my subject, but there are a few thoughts I would like to leave with you for reflection: How many cancers have been treated medically (local and constitutional) by doctors until all hope of surgical cure has been lost? There is but one treatment and that is surgical; this is to be supplemented by radium and *x*-ray wherever it is possible to administer this treatment. We have, heretofore, been more or less negligent in our consideration of these heart-rending cases. Let us profit from our mistakes and experience.

THE OPPORTUNITY OF LARGE CLINICS IN THE CAMPAIGN AGAINST CANCER.

BY JONATHAN M. WAINWRIGHT, A.M., M.D.,
Scranton.

It will be readily agreed that the problem of reducing cancer mortality is an extremely complicated and difficult one. If progress is to be made, it will require the coöperation of all classes of medical men, from the overworked family physician in the country to the distinguished surgeon at the head of a large clinic.

One will frequently hear operators in large clinics strongly objecting to the fact that so many of their cancer cases come to them after the most favorable time for operation has passed. But the great clinical teacher, perhaps, does not realize that with him, more than with any other one individual in his community, lies the opportunity for constructive work which will do much more to remodel the conditions of which he complains than scolding the family physician and general practitioner, who probably is not there to hear.

How much more good could the members of the staff of the large clinic do if they would get into closer personal touch with the physicians of cancer patients and take them more closely into their confidence. When a physician refers a case as a "private patient," he perhaps accompanies the patient to the hospital, and the relation between physician, patient and surgeon is all that could be desired. In many cases, however, especially in the wards, the physician does not know exactly when the patient enters the hospital; he is not present at the operation; he can not see for himself that the glands are involved, that the local spread is extensive, and that the case is really a very late one. If a recurrence takes place, the patient may go elsewhere and, altogether, the first physician's interest in his cancer case is, through no fault of his own, a very cursory one.

The plan we should like to see carried out is somewhat as follows: In every hospital, when a patient with a cancer is to be operated on, some one in the office force should have it as a definite duty to locate the family physician or any physician, whosover he may be, who has previously been in attendance, and to invite him to the operation. Then the surgeon should inform himself as to who this physician is and should find out if he is in the amphitheater. If so, he should invite him down into the pit where he can really see the operation and the extent of the disease. If the physician is not present, it should be the surgeon's duty to ascertain the name and address, and in a few days write to the physician and describe briefly conditions found at operation. If the case has fortunately been sent in early, the physician should be duly complimented. If, on the other hand, the case is a late one the operator should take some tactful means of calling the physician's attention to the conditions by which the disease could have been recognized earlier and of explaining how much better results could have been hoped for if there had been no delay. In this way, the physician will justly be brought to feel that he is a very important factor in the cancer case and his attitude will be a very different one from that of the first described physician who is left out in the cold.

Every hospital draws its cases from people who have been patients of a more or less well-defined group of physicians, limited by the district or the town or in some other way. It can not be doubted that, if the hospital followed the plan outlined, after a year or two the group of physicians in question would become so much interested in the work that they would be eager to coöperate with the hospital in getting cases in early.

We believe that the credit for first adopting some such plan as this belongs to Dr. Bloodgood at Johns Hopkins. Dr. Bloodgood has worked in this way for some little time and he now feels quite certain that as a result the physicians in his own particular sphere are sending him their cancer cases much earlier than formerly.

This plan for the hospital and its staff to get into closer and more confidential touch with the physicians of its cancer patients is not at all more impractical than many of the activities of the now very common social service of hospitals would have been considered a few years ago.

It does indeed entail more detail and more work for surgeons,—but what are we for? It can not be denied that any surgeon or staff of surgeons who will faithfully carry out this plan will be amply rewarded by the improvement in their own results. Hospitals and their staffs who will actively apply the "Bloodgood Method" here outlined will greatly increase their service to their communities.

And lastly we believe that, as an efficient method of reducing cancer mortality, this plan should appeal as an imperative duty.

THE DORMANCY OF CANCER INFECTION.

BY EVAN O. KANE, M.D.,
Kane.

(Read before McKean County Medical Society, Tuesday, April 6, 1915.)

Some thirty-seven years ago my attention was drawn to the case of an old man with cancer on the lip. My preceptor who had been refused permission to operate, informed me that this man was one of a well-known cancer family, who, he added, were "all full of cancer." How correct the doctor was in this statement, I can not say. He was incensed at not being permitted to operate, and as he always seemed to consider it a disgrace to have cancer (though he died of one himself) this brilliant surgeon may have allowed his imagination to color the facts. He appeared ingenuous, however. The family denies any knowledge of deaths from cancer having occurred among them prior to those in the history here submitted. As this family is a prominent one and well known to most of those present, I have deemed it advisable to alter the initial. I desire to thank Dr. McCoy for aiding me in obtaining my data.

Briefly stated this history is as follows: Orin J., had cancer of lip, died 1878, aged fifty-eight; Orlando J., brother of Orin, had cancer of stomach, died 1890, aged sixty-seven; Eliza J., oldest daughter of Orin, had cancer of the stomach, died 1887, aged thirty-seven; Dolly J., second daughter of Orin, had cancer of stomach, died 1888, aged thirty-five; Albert J., son of Orin, had cancer of face, died 1894, aged thirty-four; Mrs. R., granddaughter of Orin, had cancer of breast, was operated on, and is still living (her grandfather on mother's side died of cancer of eye); A. Lincoln J., had cancer of fingers; is living.

To the prejudiced observer the above history might demonstrate the hereditary nature of cancer. Yet, a little consideration will, I believe, plausibly suggest that these cases were all the result of infection. This infection might have originated from a common cause, as locality,[1] or from close association of the individuals concerned; from the water which all drank ("the old moss covered bucket"), or the vegetables mutually shared, and cultivated on the same farm; tree or plant infection, or other environmental influences. It might be due to the inherent receptiveness to an everywhere-present, though thus far undemonstrated, infectious agent, as has been termed with phthisis the hereditary predisposition. Possibly some ancestor, having harbored this disease germ, handed down abundant cultures of it to his descendants, who, living very much together (for the family was always a very united one), imparted the disease to one another much as a leper does to his friends and relatives.

I think that, if we would recognize for cancer the same prolonged period of incubation, or more properly let us term its "latency," "dormant life" (I have coined the term "dormancy") that is now conceded to tuberculosis, the continuance of the disease throughout generations as well as its wide dissemination would be explained. This may be why it does not usually display itself until middle or advanced age. Late recurrence after operation may be only a more tardy ripening in surrounding foci, due to less favorable conditions than in the central area.

This may explain the apparent tendency to metastatic spread in malignant growths. Many of the cases where we have assumed that the nodules in regions remote from the mass first discovered had been carried thither from a parent growth may, in reality, have originated there independently of each other, though from a common origin and merely sprung into activity later on account of less favorable influences. As the grain sown in a field will germinate and grow at different dates and rates in accordance with the nature of the soil, amount of moisture, sunlight and heat, or may fail to grow at all until transported in the earth to another locality, where it springs up unexpectedly as weeds do in a garden where soil has been utilized as loam from some distant field, just so, may not a parent carry cancer germs throughout life without developing the disease through an innate lack of germinating force or inhibiting power, and yet transfer it to the offspring in whom, after the age of active resistance, it grows vigorously?

No one can question the frequent existence of true metastasis also. They can be traced along the lymph channels and assumed to travel through the venous circulation, but these foci of active disease should not be supposed to have lived their whole life dating from the period of reimplantation. It would be more plausible to assume that they are analogous to the sprouts or clippings that a florist cuts from his old plants and pots out to grow afresh as new and vigorous young cultures, though they and the old stock are of like remote parentage.

This most horrible, most insidious, most relentlessly invincible of all parasites, whatever it may be, must and will be discovered. When this etiologic factor is brought to light the prophylaxis and cure will not be long in following. Until then we must content ourselves with palliative measures, the knife, serums, x-rays and radium, looking to the last named agent, radium, with a growing hope as its marvelous power becomes increasingly apparent.

AN ANTIPRURITIC POWDER.

The following is recommended by Bulkley as effective in the relief of pruritis:—

℞ Camphor,	ʒ ss
Zinc oxid,	ʒ ij
Starch,	ʒ iv

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[1] See the oft cited Cancer House Families.

FAR-ADVANCED MALIGNANT DISEASE.

BY JOHN H. GIBBON, M.D.,
Philadelphia.

(Read before the Northumberland County Medical Society, June 2, 1915.)

I come before you with no new cure or new cause for cancer; these you can discover in your morning papers once a week regularly. What it seems to me would be of interest to consider is what we ought to do in cases of far-advanced malignant disease. There is no more responsible and no more pathetic situation than to be confronted by a patient with a far-advanced cancer. Now, if you bear in mind that this is the type of patient I am talking about, I think we can find there is something we can do in these cases, something we should not do, and there is certainly a duty we owe to the public in this connection.

I am strongly of the belief that the radical operation for malignant disease, if done early and properly, cures a large number of accessible malignant growths. I am equally certain that operations, however thoroughly and properly done, if done late, cure practically none. I believe this to be a perfectly true statement in regard to the operation for cancer, and therefore it is obvious what our line of procedure should be; that is, we ought not to subject a patient with a far-advanced malignant disease to these extensive and useless operations. The early and radical operation does cure the patient of cancer in the early stages (there is no question about that), but the laity doubts it. You can not make a layman believe that a patient is really curable of any type of cancer by surgical operation and, unfortunately, there are some members of our profession who have the same feeling. Let us see why the layman and a few physicians feel this way about it. The layman knows nothing of successful cases; he hears nothing about them. A woman has an operation for cancer of the breast; she has no return, so she keeps quiet; she has a feeling that she does not want it known she has had a cancer. The laity are familiar with the bad results and so are we all. The cases of recurrence can not be hidden. The cases in which the patients are operated on repeatedly for recurrence are known to us and often to the laity and we gather our impression from these cases. Therefore, I do not think the laity is to be blamed for arriving at this conclusion from observation, because it is the natural conclusion.

There is no one who has practiced medicine for many years, or who has worked in a surgical dispensary, who has not had a patient come in with a tumor and say, "Doctor, if this is a cancer, I am not going to have it operated on; if it is not a cancer, then I am willing to have the operation." I operated on a woman about a year ago for cancer of the breast, a very intelligent woman, who at her first visit said if she had a cancer of the breast she did not want to be operated on, because so many of her friends had been operated on and had died later of recurrence. I said, "Supposing this is a cancer and it is removed and you have no return, are you going to say anything about it?" She replied, "Certainly not; I have not mentioned it to a soul." I then told her I had operated on a number of her friends who had been cured and had kept it quiet.

There is an ethical side as well as a surgical or professional side to this subject, namely, the duty we owe to the public. We are responsible for this prevalent feeling of doubt in regard to the cure for cancer, because we have been guilty of operating on patients with far-advanced disease who ought never to have been operated on. We sometimes say we will give them the benefit of the doubt and operate; or, we operate out of sympathy because we are sorry for them and feel something ought to be done. The moment we operate in this type of case we are fastening a false idea in the mind of the layman. Every time we operate in a case of inoperable cancer (we have all done it, and what I am trying to do is to do it less often and to urge you to do it less often), such a patient goes back home and has a recurrence in a few months and dies, probably having lived a little longer than without the operation. But we have not really benefited the individual and we have impressed his entire circle of acquaintances and relatives with the idea that cancer, once established, is incurable. Now some member of this patient's family or circle of acquaintances develops a cancer; he says to himself, "This may be a cancer, but what is the use of having anything done; Uncle Sam (or Aunt Mary or somebody else) had the same thing, was operated on, and it came back in six months and he (or she) died."

Every patient that has a cancer reaches a stage when he is perfectly willing to be operated on, but of course that stage is reached when nothing can be done. You have had patients, as I have, who did not want anything done when it ought to have been done, and when it was too late, they wanted operation. The individual I have just pictured to you, who puts himself through a false line of argument, reaches the same far-advanced stage his relative reached, and then the same mistake of operating for an inoperable cancer is repeated. I am convinced that here lies one of the reasons for the feeling of the hopelessness of surgery in the face of malignant disease.

When a patient with an inoperable, far-advanced, practically hopeless growth presents himself, we should not operate. We ought to say, "It is too late, the growth has gone too far for surgical relief." You say, "That lets the individual suffer," but I say it does not and it is our duty to the public. I am arguing on the ground that we ought to correct a false idea. Such a patient goes to his home and dies in a short time of malignant disease and the onus of the mistake or neglect falls where it belongs, either on the patient himself, or on the physician or the surgeon who has advised him in the beginning not to have anything done. It is known among his circle of acquaintances and relatives that this person died of malignant disease, and that it was inoperable when he applied for treatment. When one of these acquaintances develops a tumor he naturally hurries for surgical advice, lest he too be too late. I think these are illlustrations of the results of operating in cases of inoperable cancer and of declining to operate in such cases.

I realize that occasionally a good result is obtained from operation when the tumor is apparently inoperable and, in view of this, some may feel that it is wise to operate in every case, but, for the reasons I have given, I believe this to be a mistake and also because, with the exercise of proper judgment and selection, the cases which are to give us pleasant surprises can be picked out and the patients operated on. Take a woman of sixty or sixty-five, operate on her and she may live to be seventy-five and die of old age. Again, operate on a woman of thirty or even thirty-five with an acute carcinoma of the breast and you stand a small chance of prolonging her life. I would operate on a woman of sixty or sixty-five with a far-advanced cancer when I would consider the same condition absolutely inoperable at the age of forty. In the young, dissemination takes place much more rapidly than in the aged. The slow-growing tumor is the type on which we can operate and get a surprise, but the rapidly growing tumor gives no surprise.

Sympathy is one of the things that sometimes lead us to operate. I made a distinct mistake about two years ago; some of the younger men here may remember the case. There was a woman who was brought into the dispensary of the hospital and I was asked by the chief of the clinic to see her. He said there was a cancer of the breast, but when I glanced at her I said, "That is an abscess." He smiled and said, "Go back and feel it." It was as hard as a rock and very red. She was a woman of forty. I could not understand this condition. It looked exactly like an acute carcinoma in a pregnant woman, but the woman was not pregnant and had not been for a long time. Upon inquiry as to why it was in this condition, I was told she discovered a lump in her breast six weeks before. She had gone to an osteopath, who said he could not cure her, but by treatment could put her in condition for an operation. He had rubbed this cancer every day for four weeks, and she was in a horrible condition with the whole breast and a mass of axillary glands involved. Her husband pled that something be done for her, and I was not strong enough to practice then what I am preaching now. My sympathy for this woman's suffering was great and I felt that possibly, if I removed this breast by wide excision and used x-rays, I might prolong her life. She had a recurrence before the wound was healed and died in six months. I would like to ask you how her friends felt about the efficacy of surgery? What had I done in that particular case to educate the public in regard to what surgery could do or could not do for cancer? Do you suppose that any of this woman's family or circle of acquaintances believes that she did not die because surgery was futile? Do you suppose that half a dozen of them know that she probably died because she had a cancer of the breast rubbed by an osteopath every day for a month?

The person who advises against operation in the operable stage of cancer is assuming an enormous responsibility and must always bear in mind that the victim will want to be operated on later when the condition is inoperable.

Last fall a year ago, I saw a young woman of twenty-nine years, unmarried, with an acute carcinoma of the breast. She had been treated at regular intervals for six months by a physician of standing, who thought she had an inflammatory condition, but when that woman walked into the hospital, my intern recognized it as an acute carcinoma of the breast. I operated, and she died of general carcinoma within a year. Another error in surgical judgment; an operation out of sympathy!

A difficulty frequently encountered is that of determining in the early stages whether a tumor is benign or malignant. Where such difficulty arises, the way to settle it is by removing the tumor. Two of my saddest memories are of mistakes in cases of this type; in one, the patient was really responsible for the mistake, for she did not come back as she was told to do for subsequent examinations, but in the second case I believed the patient was suffering from a chronic cystic mastitis and did not operate until some months afterward, when the tumor was distinctly malignant. I mention these errors of my own because I do not want you to think that I consider the problems confronting us in the treatment of malignant disease simple ones, and I should like you to profit as much by my mistakes as by your own. Our mistakes can be put into three classes: (1) Those due to ignorance, which I believe are the least frequent; (2) those due to carelessness, which are by far the most frequent; and (3) those that might be called honest mistakes, where we exercise all the knowledge we have and yet sometimes fall into error. Only those mistakes which fall in the last group are excusable. The mistakes from carlessness are far too numerous and are often made because we are in too much of a hurry or too busy to give the patient a thorough examination. How many patients with carcinoma of the rectum, who ultimately come to the surgeon, do you suppose have been treated for hemorrhoids without having had a digital examination of the rectum? And how should one feel who makes such a mistake, distinctly one of carelessness?

One of the commonest and most fallacious pieces of advice given patients in regard to tumors is that old expression, "Do not trouble it until it troubles you." A fact that we should ever keep in mind is that nearly every benign tumor is potentially malignant and advising patients to disregard these growths is nearly criminal.

Another error which we surgeons make is that of operating on a primary growth, when visceral metastasis has taken place. In one instance I was induced to operate on a woman who had a perfectly operable carcinoma of the breast and yet I believed that she had a spinal metastasis. She had suffered for weeks from an intractable lumbago. Other contrary opinions, both neurological and surgical, were obtained and I did the radical operation for cancer of the breast. A few months later the spinal metastasis was perfectly apparent and the patient died shortly afterwards of a general carcinomatosis.

It must be remembered that in the young and in certain situations, visceral metastasis is often present when we least expect it. There is no better illustration of this than cancer of the rectum, where metastasis to the liver occurs early and insidiously. I have been saved a mistake more than once in such cases by opening the abdomen, and on two occasions I found a metastasis well established in the liver, when the growth in the rectum was perfectly operable. You can readily see how foolish it would be to operate for carcinoma when there is a visceral metastasis present. And I would particularly like again to say that when it comes to the treatment of rectal conditions, unless you are prepared and willing to make a thorough examination of the rectum, you should not prescribe. Never accept a patient's diagnosis of a rectal condition because you will sooner or later make a fatal error. Never give your favorite "pile ointment" simply because the patient says he has hemorrhoids.

Still another point which I should like to speak of is the question of teaching. It has been said that it is a mistake to teach students that enlarged glands and cachexia are symptoms of malignancy, and I believe that this is so and that these conditions should be described as complications and indications of well-established malignancy. If we drum into the students and emphasize in our textbooks only the late symptoms of malignant disease, we can expect nothing save that those who listen to us will wait for these symptoms before making a diagnosis.

Can anything further be done in the way of surgery for malignant disease than is done today? I think not. Operations for malignant disease, so far as extent and thoroughness go, have reached their limit. We can do nothing more for a cancer of the breast than we now do. We can do nothing more for a cancer of the rectum or stomach than we now do. So far as the actual operation is concerned, we can do nothing more than we are now doing. The only improvement we can look for must come from impressing the laity and profession with the fact that, if an operation is to be done with any chance of cure, it must be early; a late operation will not give good results; and, if a metastasis is present when the operation is done, it will grow faster and the patient's life thereby be shortened.

The last and most difficult question which we have to consider is what can be done for the far-advanced malignant disease if we are not to operate. Some have taken the attitude that there is so little that can be done that operation is justifiable, but, personally, I should rather do nothing than perform an operation which carries with it pain and suffering and no chance of relief. In cases of inoperable sarcoma, we should always employ the Coley toxins in connection with the *x*-rays. Many of you have probably had discouraging experiences with these agents, and I must confess that my own experience has not been very gratifying, but, by these means, I have certainly cured one case of inoperable sarcoma and have seen others temporarily benefited. Oftentimes the results from the use of the toxins are unsatisfactory because they have not been properly employed and no one should undertake their use until he has familiarized himself with Coley's method. Coley has now collected reports of hundreds of cases of cures in inoperable sarcomata and his toxins offer more than anything else in these cases.

In inoperable carcinomata we have three agents which may be employed, the *x*-rays, the radium, and the cautery. I am not here to tell you of any marvelous results from these agents, but I have seen the most dramatic and surprising results from the use of each of them. I have not seen a single cure of a far-advanced inoperable carcinoma by any of them, but that does not mean we ought not to use them. They are a great deal better in the far-advanced case than surgery, and in such cases they ought to be used. I have seen a carcinoma of the breast under *x*-ray treatment melt down until the patient thought she was well. It relieved the pain and prolonged her life. I think in inoperable cases we ought not to turn the patients away; but, in my opinion, we should not operate on them.

HEMORRHAGE FROM THE NOSE AND THROAT.

BY GEORGE FETTEROLF, M.D., SC.D.,
Philadelphia.

(Read as part of a Symposium on Hemorrhage before the Philadelphia County Medical Society, January 28, 1914.)

As regards this part of the body, blood may appear at the nostrils and at the lips, and a distinction must be drawn between hemorrhage from the upper air passages, that is to say, originating in the upper air passages, and hemorrhage through the upper air passages, such as the spitting of blood derived from the lungs or stomach. Consideration of the latter is beyond the scope of this paper. Even would time allow it, this is not the occasion for a detailed enumeration of the many causes for effusion of blood from the nose and mouth. Such a list has been made many times and can be found in any good textbook on diagnosis. The time allotted to this portion of the symposium will be devoted to three points of practical significance. One of these is a somewhat detailed description of a concrete procedure for checking serious nose bleed, a second is a consideration of the treatment of hemorrhage following tonsillectomy, while the third is a discussion of the great rarity of nontraumatic hemorrhage originating in the throat. Upon this last point I would lay especial emphasis.

First—as regards epistaxis. I venture to take up this matter because it is one that every physician meets, because it sometimes assumes serious proportions and because the difficulties in handling it fade away if it is thoroughly understood and well-directed treatment is applied. It may originate in the nose or in the nasopharynx, and may be profuse or mild. If mild, it requires no attention, but if severe it usually needs treatment. Should it be nature's method of relieving high vascular tension or an overburdened heart; one should not be in too great a hurry to suppress it, but if it is not of such beneficent origin, measures to check it must be adopted. There is but one correct procedure for doing this, and that is to locate accurately the bleeding spot and apply the proper treatment directly and only to that point.

Prime requisites, whether it be at the patient's home or at the physician's office, are a good light, a head mirror, a position of the patient which will allow of accurate inspection and treatment of the nose, and a convenient table on which all paraphernalia can be laid out for ready access. The armamentarium should consist, in addition to the head mirror, of a nasal speculum, an applicator, a pair of nasal dressing forceps, cotton, five per cent. cocain in 1:1000 adrenalin chlorid solution, chromic acid crystals and tincture of benzoin. To these should be added a tongue depressor. The position of patient, light, etc., are very important, as only with these things favorable can good and accurate work be done.

Everything being ready, the first thing to do is to clean the nose; all packing and clots should be removed. No hesitation should be felt in doing this, for both packing and clots are evidently of no use or the bleeding would not be continuing. Then, with the patient in a convenient position, the tongue should be depressed and the soft palate and pharyngeal wall examined for blood. This should be done carefully, for the blood may be running down the lateral wall of the pharynx and being concealed by the posterior pillar or tonsil, or it may be dropping from the tip of the uvula. If blood is discovered on this examination, the quantity should be estimated, as one can then, by noting the amount coming from the nose, tell how serious the situation is and how great or how small is the need for haste.

The nose then should be examined, and ordinarily it is easy to tell from which nostril the hemorrhage is coming. In some cases, however, while originating in one side it may appear in the other or in both, either by way of the nasopharynx or through a septal perforation. Having determined the offending side, the head of the patient should be turned well to the opposite side, so that a lateral view of the front part of the septum can be obtained. A speculum should be inserted into the nostril and the anterior part of the septum carefully scanned. For this purpose there is nothing better than the Allen hard rubber speculum. In over nine cases out of ten the bleeding spot will be found right at this part of the septum, a part known as the *locus Kieselbachii.* At this point erosions and dilated veins are very common. In many noses these veins can be seen on simple inspection, but to render them clearly visible in others this portion of the septum first has to be blanched with adrenalin. After a few moments' application of this drug the mucosa will be whitened and the veins will stand out like a small tree with the trunk below and the branches above. Destruction of these veins, a very simple procedure, will often cure permanently that numerous class of patients who suffer from recurring nose-bleed.

If Kieselbach's area is not the offending one, the anterior end of the middle turbinated should next be inspected. In practically all cases the bleeding point will be found at one of these two areas. In cases of direct trauma the septum or the bridge will be the parts to examine. If syphilis is the cause, either the septum or the outer wall should be investigated; if tuberculosis is suspected, the anterior part of the septum and the vestibule will be the most likely areas. However, in these two diseases, hemorrhage is rather rare. If the bleeding is vicarious, or at the beginning of a typhoid fever attack, the anterior part of the septum is the probable point of origin.

Having found the spot, a pledget of cotton saturated in a solution of five per cent. cocain in 1:1000 adrenalin chlorid solution, the cocain for anesthesia and the adrenalin for ischemia, should be squeezed until it does not drip, and then placed against the bleeding point and firmly held there. If the hemorrhage is from the usual point, pressure by the finger of the side of the nose against the septum will do the work admirably. At the end of about five minutes the pressure can be relieved and the pledget withdrawn. By this time the bleeding will usually have ceased sufficient to allow of careful inspection and treatment. If this is not the case another similar pledget will usually suffice. Gentle wiping of the mucosa may or may not be needed to reveal the bleeding point, which now should be treated in a way to prevent a renewal of the bleeding. A crystal or two of chromic acid fused over a flame on the end of an applicator and applied to the bleeding point will usually check the trouble. In the absence of this acid, or should it not be effective, a small disc of gauze or pledget of cotton should be saturated in tincture of benzoin, squeezed dry, and firmly pressed against the offending area and left there. This will be effective unless the patient is a bleeder. Should the latter be the case, the difficulty then ceases to be a local one and measures to increase the coagulability of the blood must be adopted.

Simple packing without inspection is sometimes successful, usually because the bleeding area is so accessible. One case I recall in which packing failed, because the septum was badly deflected and the leaking vessel was on the deeply concave side. This had not been noted and the packing had been pushed straight back and past the oozing vein. Pork rind has succeeded at times, because the plug happened to be of such shape as to exert pressure at the correct place.

Bellocq's cannula and similar articles rarely if ever need to be used, and then mainly if the hemorrhage is from the nasopharynx. If the latter needs to be packed, two strings had better be applied to the gauze pad, one with which to draw it into the nasopharynx, and the other allowed to come out of the mouth. The use of the latter makes easy the removal of the pledget, a most difficult and vexing procedure in the absence of this help.

Sometimes a case will present itself in which all local measures fail and ligation of the external carotid artery becomes necessary, but fortunately these are very rare.

The second point, the treatment of hemorrhage following tonsillectomy, naturally divides itself into two sub-headings; *viz.*, prevention and treatment.

In prevention the following measures have been found of value. The patient should go to the hospital the evening before the operation and stay there in bed for not less than a day afterward, so as to have at least physical quiet immediately before and after the operation. He should not leave the table till all bleeding from the tonsil fossæ has ceased. It has been my routine practice of late to swab the tonsil bed in all cases with ten per cent. solution of silver nitrate until a dry fossa results before the patient is sent from the operating room. This procedure usually will quickly check all oozing; should any vessels persist in bleeding they are checked by suture. If it is possible to secure the individual vessel with a hemostat a suture is passed under it and tied or secured by means of a perforated shot. If the hemorrhage is general or the vessel or vessels can not be grasped by hemostats, a pad of gauze soaked in ten per cent. silver solution and squeezed till all excess is removed is placed in the fossa and retained by one or more sutures passed through the pillars and shotted. Shot is used instead of tying the sutures, because it is easier, tension can be regulated more accurately and removal of the suture is facilitated. Packing and sutures can be taken out in twenty-four hours. The routine use of silver has seemed to possess another advantage, in that since I have been using it patients have had less painful throats than formerly.

So much for prevention. As regards treatment, this of course should be instituted as soon as possible. A competent nurse should be in charge of the patient till he is fully out of ether and awake. If there is more than one vomiting of blood it should be reported. The patient should be kept on the side, so as to promote bleeding into the mouth instead of down the esophagus. This position is essential, for blood can flow down the esophagus without any visible muscular action of the throat to suggest that such is happening. The color of the patient should be noted and any undue pallor reported. The pulse and temperature should be taken every hour for five hours and any divergence, that is increase in pulse rate with dropping of temperature, should be reported.

When the physician is called and bleeding discovered the condition of the patient and the rapidity with which blood is being lost should be estimated. If the hemorrhage has been copious procedures directed toward replacing lost fluid, procedures familiar to all, should be instituted. A hypodermic of morphin is of value. The first step is to place the patient where a good light can be reflected into the throat. The latter should then be carefully examined and the bleeding point or area accurately located. If the bleeding is capillary, gauze pads held in sponge-holders or hemostats and impregnated with ten per cent. silver nitrate solution should be held in the fossa for five minutes and then removed. If the bleeding continues this should be repeated until it is successful, or it becomes evident that it will not succeed. Tincture of benzoin or powdered alum, or one of the various forms of clamps may be tried, but if these fail there should be no further losing of time. The patient should be reëtherized and the necessary sutures inserted. No matter how desperate the condition of the patient, no hesitation need be felt in readministering ether. Usually very little is required, and in every case in which I have had to do this the pulse, color and general condition of the patient have been notably better after the second anesthesia than before.

The third point, *viz.*, the question of hemorrhage from the throat without any marked lesion of that portion of the body, is a most interesting and practical one. In this connection it is necessary to speak in a rather personal vein. In my early years of throat work if it was necessary to examine a patient complaining of blood-spitting, I would examine the upper air passages in a confidently expectant frame of mind. In spite of taking into consideration such obvious causes as spongy gums and blood which had run backward from a bleeding nose, I found a visible source of the blood so seldom, practically never, that I was at sea. I accepted the textbook statements that coughing could cause a rupture of the small vessels of the throat, and concluded that the break was so tiny and healed so quickly that it could not be discovered. Later a deep personal interest in tuberculosis was developed, largely through membership on the staffs of the Phipps Institute and the White Haven Sanatorium. The study of problems in chest diagnostics still further increased this interest and my point of view naturally broadened. Instead of accepting resignedly my failure to find in the throat any source of expectorated blood, I began to use the stethoscope. The difficulties then ceased, for with the latter the source of the blood was usually found. The practical outcome has been that now when a patient comes with a history of blood-spitting, I expect to find the cause with the stethoscope, and do not expect to find it with the tongue depressor or the throat mirror.

It is not fair to ascribe blood to the throat unless it can be seen flowing, or unless there is present a definite lesion, such as an ulcer or a growth, from which it might come. Since the invention of the electric nasopharyngoscope it is possible to examine and inspect thoroughly practically every part of the pharynx. In twenty-one years of throat work I recall having seen but four cases of nontraumatic hemorrhage from the throat, that is, four throats which were bleeding when I saw them. This experience included many cases of recent blood-spitting, and when the case was sufficiently fresh, blood of a bright red or brown color could be seen in the larynx and trachea.

These four cases of throat bleeding are as follows. One of them was not unusual, but the other three were.

The first case was one of tuberculosis, and in the larynx there was a ragged ulcer of the false cord, from which fresh blood was oozing.

In the second the blood was pouring from a crypt in the right tonsil.

The third was a case at the Phipps Institute, a well-nourished man, who gave a history of hoarseness and of hemoptysis for six months. Dr. Landis could find no chest lesion and referred him to the throat clinic. He had a pedunculated anterior subglottic papilloma, which on phonation would be forced up between the cords and squeezed. At the time of examination blood was oozing from the surface of the growth.

The fourth case was quite unique. A girl of sixteen complained of finding blood in her mouth every morning. Examination of her chest showed no evidence of lung trouble. Her heart had a marked valvular lesion, the location of which I have forgotten. The gums, nose and teeth were perfectly healthy. Examination of the throat was negative until finally, by means of the nasopharyngoscope, a small leaking varix was found on the upper surface of the soft palate. After this was cauterized the bleeding stopped.

One can fairly ask the question, Why should a small vessel give way in the pharynx? Several times daily there are quantities of food being squeezed from the mouth into the esophagus and the pharynx is tough. It is hardly likely that an attack of coughing could cause one of these vessels to rupture through the tough mucosa of the pharynx. The possibilities of this happening in the tracheobronchial system are so infinitely greater that the pharynx can be theoretically as well as practically eliminated from consideration.

By attaining this point of view it has been possible to diagnose early, and refer for prompt and successful treatment many cases of very early tuberculosis. It is very important that a laryngologist should be able to examine a chest; not that he shall treat such conditions as he may find there, for they are beyond his sphere, but in order that he can tell the patient that there is something wrong, and that it should be attended to. If only the throat is examined and the patient is told to go elsewhere and have his chest gone over, he may possibly avoid having that examination made. If, on the other hand, the laryngologist is able to make the examination the diagnosis can be made then and there and the patient warned and put in the way of having prompt advice and treatment. It is not necessary that the throat man shall be skilled in diagnosing the finer and more obscure lesions. If he can listen understandingly to the apices of the lungs and will have the courage to make a diagnosis on the early signs combined with a careful history of the case, he will have added much to his usefulness, and will be able to save some of his patients much time and many years of life.

In conclusion, I wish to say that I feel very strongly that such statements as the following one from West[1] should be eliminated from the textbooks and from medical teaching. West says, " . . . . In chronic pharyngitis, where the mucous membrane is spongy and congested, the violent hawking and coughing may cause some of the small vessels to give way and streak the secretion with blood." A safer plan, and in this I believe all throat men will concur, would be the substitution of some such teaching as this: Hemorrhage from the throat, unless originating from trauma, ulceration or neoplasm, while possible, practically never exists. Such hemorrhage should be the signal for a careful study of the patient's history and a searching examination of the chest.

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[1] West, Samuel: Diseases of the Organs of Respiration, 1902, Vol. I., p. 375.

HEALTH MEASURES AFFECTING FACTORY EMPLOYEES; SOME REMARKS ON THE MEDICAL PHASES OF SUCH LEGISLATION.

BY J. E. TUCKERMAN, A.B., M.D.,
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(Read at the 39th annual meeting of the American Academy of Medicine, Atlantic City, June 20, 1914.)

From a legislative standpoint health measures may be national, state or local. The bulk of the laws affecting the health conditions affecting factory employees are passed by state legislatures. It is obviously impossible for me to touch upon all the specific instances in which legislation bears upon the question. Even so seemingly remote a subject as the registration of births and statistics on trade conditions in general have a bearing upon the matter.

Laws regulating the health conditions of factory employees were first directed against accidents. But accidents are responsible for only a part of the morbidity and mortality incident to industrial occupations. Dr. F. L. Hoffman[1] has stated that industrial workers of this country lose annually 248,750,000 days in sickness, representing a money loss of $772,892,860—one quarter of which is preventable. An analysis[2] of the situation in Ohio shows that among the real workers in shops, factories, mines, offices, and stores, over one half of the deaths, according to census figures for 1910, were due to preventable causes. Of these preventable deaths one seventh were due to accidents and violence and six sevenths to the diseases tuberculosis, pneumonia, typhoid and poisons. For the United States, the National Council for Industrial Safety estimates the number of killed and injured in the industries of the United States each year at 2,035,000.[3]

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[1] *Monthly Bulletin*, Ohio State Board of Health, Vol. IV., No. 4, p. 597. April, 1914.

[2] *Ibid.*, Vol. IV., No. 4, p. 516, Apr., 1914.

All laws having for their object the control of working and living conditions, whether of factory employees or touching the matter of living of the public generally, have their medical side. These laws, or, if you prefer to so call them, regulations, must be founded upon known medical facts and administered with a full appreciation of their sociologic bearing upon the race. The field is one for preventive medicine and for sanitation rather than for curative medicine.

The extent to which the application of known medical facts can control the health conditions of large bodies of men is well shown in the sanitary conditions obtaining on the isthmus of Panama. Similarly the control of cholera, plague, smallpox and yellow fever in the Philippines, Puerto Rico and Cuba, are instances of what can be done through military supervision. And now we have at hand the reports[4] of the wonderful results in the United States army in the control of typhoid fever by vaccinating against it. An army of 90,000 men scattered through the United States, Philippines, China, Puerto Rica, Cuba and Hawaii, and some 12,000 of them camped in Texas during February of 1913, reports but three cases of typhoid fever, two of which occurred in unvaccinated recruits. There were no deaths. Compare this with the best record in any of our large cities.[5] New York, in 1913, had 7 deaths per 100,000; Cincinnati, Ohio, and Scranton, Pa., each had 6.4 deaths per 100,000; Seattle, Wash., had 4.9 deaths per 100,000; while for a city of 100,000 (the army has 90,000 men), Bridgeport, Conn., had 5.4 deaths per 100,000. For the whole United States, in 1913, the death rate was 12.7 per 100,000. And the army reports three cases, not deaths.

Such results can be obtained only when experts in sanitation are given full power to apply the known facts of medical science and the established methods of health conservation.

Health legislation coming in conflict with that which people have been wont to consider their personal liberty, we must in large degree depend upon education rather than force for the acceptance of efficient health regulation. The employer, as well as the employee, frequently considers state interference troublesome and unwarranted. Such exceptional conditions as those under which the medical and sanitary expert conducts his work at Panama, or in the army, are difficult, in fact impossible, to be established generally in the states, with the public attitude what it is. The public unfortunately distrusts experts and considers itself fully able to judge what should and should not be done in the governmental application of medical science. In a democracy the only way to accomplishment is through educating the public to a faith in and reliance on the judgment of experts.

This is a long process, for the public will give its support only so far as it can see forthcoming results from past performances. Dr. Isadore Dyer says:[6] "The public is a self-constituted critic prejudiced against the profession and clamoring for demonstrated achievements, but it is also a great child needing to be led into the ways of cleanliness and health. With the spirit of to-day the public is ready for education and we owe it to ourselves to go more than half way in the effort to instruct it." It is fortunate that such proofs of the benefits of the application of sanitary science in Panama and elsewhere are at hand to serve as examples of what can be accomplished, and to furnish the text for popular education.

Like the public, being a part of it, the legislator holds a similar attitude of opposition but in a more intense degree, toward experts upon any matter. Particularly is this true when he is asked to give ear to the medical expert or to the profession at large. Whether we will or not, the medical profession has been placed in the attitude of a special interest seeking preferment at the hands of the legislators. Despite the fact that it has been through the efforts of physicians themselves that requirements for medical licensure have been raised and despite the fact that it is exceedingly hard to practice medicine but exceedingly easy to practice unhindered most any "ism," none the less whenever laws are passed regulating the licensure of physicians, they are considered of peculiar benefit to the physicians rather than to the public.

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[3] *California State Journal of Medicine*, Vol. XII., No. 2, Feb., 1914, p. 49. "Industrial Accident Law."

[4] *Journal American Medical Association*, Vol. LXII., No. 18, May 2, 1914, p. 1371. "Antityphoid Vaccination in the Army during 1913."

[5] *Journal American Medical Association*, Vol. LXII., No. 19, May 9, 1914, p. 1473. "Typhoid in the Large Cities of the United States."

[6] *Texas State Journal of Medicine*, Vol. IX., No. 10, Feb., 1914, p. 137. "Preservation of Health."

To change the attitude of the public and the legislature toward the medical profession, it should be our business to point out clearly that laws restricting practice to those having certain qualifications are laws for the benefit of the public and are in reality a restriction upon the individual liberty of the person desiring to practice.

It should be our business to make it clear that health boards and boards of medical licensure are not a part and parcel of the medical profession, but are agencies of the state having police power to protect the public and in prosecuting their activities are entirely distinct from the profession at large. We should endeavor to bring about that these bodies shall receive their funds from state taxation and not be hampered by inadequate amounts as are the boards of licensure when limited to funds derived from fees for registration and fines from prosecutions.

The profession should educate the public away from the idea that the profession has an axe to grind whenever medical legislation or legislation containing a medical aspect is under consideration. The profession should refuse to be involved in lobbying for any bill, but should be prepared and ready to give advice, founded upon knowledge of their particular subject, on any bill affecting directly or indirectly the health of the public.

The laws prescribing health and sanitary condition for employees are essentially matters for experts. Questions arise in which the legislator and sociologist should have their views tempered by medical and business advice. These questions must be broadly considered from many sides, otherwise they fail of their purpose by being impossible of operation. A law intended to meet certain conditions is made to apply in special instances where it is unsuited. At the present time hospitals, and particularly small hospitals, in California are handicapped by an ill-considered eight-hour law for nurses.[7]

The extent to which laws go governing the conditions under which employees work is easily noted by consideration of the topics covered by laws of any up-to-date state. In Ohio the legislature of 1913 laid down four statutes. The first requires physicians to report to the State Board of Health[8] instances of occupational disease; the second empowers the board to investigate industrial hygiene throughout the state and to inquire into all work factors which might in any way deleteriously influence the health of workers; the third provides that manufacturers of certain lead compounds shall make special provisions for the protection and welfare of their workers and provide monthly examinations by physicians of all workers exposed to lead substances; the fourth empowers the State Board of Health to investigate and pass upon the advisability of employing minors in any of the health-hazardous industries from which they are not already prohibited.

Among the industrial health hazards enumerated are dust, dirt, dampness, darkness, devitalized air, heat, cold and draft, fatigue, inactivity, caisson work, germs and infections, poisons, alcoholism, and risk of venereal diseases. The extent to which these health hazards operate is seen by the fact that a study[9] of six hundred establishments in Ohio, employing 124,000 people, shows 56,000 in hazardous employments.

Industrial insurance companies show[10] that 3,000,000 people have industrial illnesses requiring a week's minimum layoff per year in the United States.

Some further idea of the medical aspect of the conditions under which factory employees work may be gathered from some of the headings in a pamphlet issued by the Ohio Departments of Workshops, Factories, and Public Buildings and entitled, "Laws Governing Factory and Building Inspection."

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[7] *California State Journal of Medicine*, Vol. xi., No. 12, Dec., 1913, p. 483. "The Eight Hour Law."

[8] *Monthly Bulletin*, Ohio State Board of Health, Vol. iv., No. 4, Apr., 1914, p. 513. "Health Hazards of the Industries."

[9] *Ibid.*, p. 515.

[10] *Ibid.*, p. 517.

Safeguarding Machinery.

Inspection of Bakeshops for Plumbing, Ventilation, Washrooms and Sleeping Places.

Regulation of Sweatshops, Entrances, Water-closets, Unlawful to Employ Certain Persons.

Minor Laws, Preventing Employment of Children in Certain Occupations.

Employing of Minors in Factories, Age Limit, School Certificates, Hours of Work, Meal Times, Girls Not to Be Allowed to Remain Standing, Etc., Etc.

Employing of Females in Sweatshops, Providing for Seats, Proper Water-closets, Dressing Rooms and Female Inspectors.

Inspection of High Explosives.

School Attendance Law, and

Law Touching Liability of Employer for Personal Injury to Employee.

It is not difficult to see the medical aspect cropping out through these topics, nor is it difficult to understand that their sociological and economic bearing must be taken into consideration before there can be a proper adjustment. The public must be so educated that the employee shall expect healthful working conditions and the employer shall willingly provide them. There should be no idea of charity about it. It is merely justice and, besides, good business. "It is five times as much to the interest of the employer to promote welfare work than it is to the employee." And whether he will or not, the change of public sentiment is going to force proper conditions. The New York Supreme Court in a recent decision[11] has recognized that industrial insurance is a proper risk to be placed upon an industry, just as much as disabled machinery is a charge against a business. The maintenance of health should be considered a charge against the industry. A similar decision has recently been made[12] by the Supreme Court of Wisconsin to the effect that medical and surgical treatment of injured employees as contemplated under the Workmen's Compensation Act of the state is neither a charity nor a penalty, but "a recognition of the economic truth that such expense is a legitimate element in the cost of production and should be placed upon the product as directly as practicable." We are therefore already at the point of social development where the maintenance of the health of its workers is recognized as a just charge against an industry. The question of further development along this line is not primarily a question of laws but a question of education requiring the services of experts in research and publicity.

Many of our cities are coming to realize the necessity of such a department in the city government, in order that progress may be made along all social lines, health included. In the new Cleveland charter, adopted a year ago under the Department of Public Welfare, there is provided a Division of Publicity and Research.[13] The scope of the provision is easily seen. It says:—

> "Section 98. The commissioner of publicity and research shall provide for the study of and research into causes of poverty, delinquency, crime, disease and other similar problems in the community and shall by means of lectures, exhibits and in other proper ways promote the education and understanding of the community in those matters which concern the public health and welfare."

In the industries supervision of health conditions by a physician is essential and this necessity is being recognized by many employers, who are voluntarily establishing welfare departments in their works.[14] Several of the large concerns in Cleveland have had welfare departments established for some time. These are under the direction of a physician, generally the surgeon of the company, who is paid a salary not merely to take care of injuries but primarily to advise as to the health conditions under which the employees work. Usually there are associated with them one or more nurses whose duty it is to be constantly upon the ground and to see that conditions are as they should be.

This voluntary activity upon the part of employers could never have come about except through the force of circumstances and the agitation for laws governing health conditions instigated by the medical sociologist. Such welfare work has too, a very intimate relation to the future of medical practice. This form of service is certain to increase and the medical profession should be in a position to advise such systems whether for state or private activity as shall be equitable to all concerned from a financial as well as a humanitarian standpoint.

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[11] *California State Journal of Medicine*, Vol. XII., No. 2, Feb., 1914, p. 50.

[12] *Journal American Medical Association*, Vol. LXII., No. 16, Apr. 18, 1914, p. 1281. "Medico-Legal."

[13] Charter of the City of Cleveland, Adopted July 1, 1913, p. 38.

[14] *Monthly Bulletin*, Ohio State Board of Health, Vol. IV., No. 4, Apr., 1914, p. 520.

Nineteen states, California, Connecticut, Illinois, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Jersey, Ohio, Oregon, Rhode Island, Texas, Washington, West Virginia, Wisconsin, have passed and have in operation laws known as Workmen's Compensation Acts, which have for their object the care of the injured workmen as well as making awards for disability and death. Perhaps the best of these are those of California and Ohio, both in their provision for the interests of the employer and employee and their intent to deal fairly with the medical profession. (Since this article was written Pennsylvania has enacted a series of laws thought to be equally as good as those of any of the states.—EDITOR.)

In California the state medical society is awake to the situation and is working out a method of coöperation between its constituent county societies and the industrial commission such that the individual physician will be fairly compensated whether working for the commission or for some one of the independent accident insurance companies.[15] In Ohio there has been considerable misunderstanding and friction, although the Act as passed is more favorable to the physician than that of any other state. This difficulty, it is hoped, will be eliminated through the activities of an advisory committee which has been appointed by the state society upon the request of the governor of the state to coöperate with the Industrial Commission of Ohio. The operation of the act will, we are sure, be much improved by subsequent experience.

It matters not whether the attitude of the profession is hostile toward what some may call socialistic and paternalistic activities on the part of the state, the profession may as well realize that this new development of communal activity has come to stay because it is an economic necessity. Where it is being operated it is proving to be of distinct advantage to the injured workman and the employer. The Industrial Commission of Ohio, with less than a year and a half's existence, is caring for 100,000 cases a year. Whether communal activity is to be equitable to the physicians engaged directly or indirectly in the employment of the state depends upon the intelligence and diligence which the profession devotes to the solution of the problem.

We are all more or less acquainted with the industrial struggles of physicians abroad. More particularly do we hear of the unfortunate position of the German practitioner in relation to the sick societies. In our medical notes we constantly find mention of pending crisis between the German profession and its insurance societies. The situation in England is more recent. The Insurance Act affects 20,000 physicians out of 22,500 who are in general practice. Our latest reports show that the benefits of the act to the physician is still in debate. There seems to be evidence to show that the physicians who have thus become employees of the government have not suffered thereby, but rather are receiving more than previously from the same class of work. Surely we in America must not flatter ourselves that such problems as confront the English and German physicians will not confront us. The economic forces are the same and whether, when the issue arises, the medical profession shall receive proper recognition lies with the profession itself.

Whenever the question of industrial insurance is up, the attitude of the profession must be one of advice. At the same time its members should have the dignity to insist upon proper consideration and compensation under the law for the profession. Proper care of the men must mean capable physicians coöperating with the state, and they should be adequately paid. Nor can the funds of the state be properly protected unless the physicians are capable.

Proper awards to the men are assured through the activities of their organizations; equitable rates to the employer, through the activities of the employers' associations; proper awards to the physician must in a large measure depend upon the attitude of the profession generally.

It is unfortunate that, in our professional activities in city, county, and state, physicians have been unable to distinguish between private charity and public gratuity, and have allowed themselves to give alms to cities and governments generally, by doing work for inadequate returns. This condition of affairs can only be remedied by careful attention and endeavor. Superficially, the three elements, the employer, the employee and the physician, seem to be at cross purposes with each other in the economic struggle—in fact they are and must be mutually interdependent. Tact and forbearance on all sides will be necessary in adjusting this newer phase in industrial life to the ethics and economics of the physician. The adjustment must be made, and whenever laws affecting the health of the operatives in the industries are projected they should be given careful consideration and study by the profession.

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[15] *California State Journal of Medicine*, Vol. XII., No. 5, May, 1914, p. 196a. "Action of the State Society on Industrial Accident Work."

THE DIGESTIVE TRACT, A FACTOR IN HEALTH AND DISEASE.

BY JOHN ALEXANDER CAMPBELL, M.D.,
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(Read before the Lycoming County Medical Society, Williamsport, December, 1914.)

In the designing and construction of any kind of engine, the object is to realize, in the finished product, a machine that will produce a maximum of power with the minimum of fuel. Of the various parts necessary in the construction of such an engine not the least important are the fire box and ash pan. In the human engine I will consider the digestive tract as the fire box and ash pan. It matters little how good the fuel may be or how perfectly the engine may be constructed, if the various parts are not kept in good working order, it will not be an efficient machine.

In this paper I shall not touch upon the fuel or food necessary to the proper up-keep of the human body (that is a broad and important subject in itself), but I want to touch upon the importance of keeping each part of the digestive tract in good condition, that each part may do its own work well; and when I say this I do not mean that we shall lay great emphasis upon cleaning up the mouth and repairing the teeth and then neglect the lower bowel and rectum.

Each division has its own function to perform, and our aim should be to keep each division in condition to perform its function perfectly. "A chain is as strong as its weakest link." Some little abnormality in the mouth may disturb the equilibrium of the whole body. Therefore, when a patient comes to us, complaining of some acute intestinal trouble or some chronic constitutional disturbance, we should carefully inspect the mouth and teeth. Some writers go so far as to claim that nearly all constitutional disturbances can be traced to an oral infection. While, of course, this view is overdrawn, yet to-day there is abundant evidence that an old ulcerated tooth may be the cause of much chronic constitutional disturbance.

The *x*-ray has been a great aid in proving this. I have seen *x*-ray plates and heard reports of several such cases, cases simulating the so-called chronic rheumatism, contracted muscles, etc., where the *x*-ray showed plainly a chronic pus sac at the root of a tooth. The use of an autogenous vaccine gave remarkable results. The patients who had not walked for months were soon able to walk (see Mayo, Billings and others). And right here let me ask you to teach the parents the importance of preserving the first set of teeth. Tell them it is just as important to have the first teeth carefully examined, cleaned and repaired as to care for the second set. When both sets have gone, urge your patients to get artificial teeth, especially old people. As their bodies weaken with age, so their digestion weakens, and yet they will swallow food without chewing it, and expect their digestive apparatus to do more work than it did when they were in the prime of life.

Thus you see that the very first division has an important bearing upon health and disease.

About all that is necessary to say about the esophagus is to keep it open, although any difficulty in swallowing, due either to a spasm or organic stricture, may demoralize the whole nervous system.

The stomach is probably the most abused organ in our body. Often the abuse begins very early in life; between the solicitous mother, the officious grandmother, the next-door neighbor and the indifferent doctor, the little stomach is filled up the first, second or third day after birth, with camomile or pumpkin seed tea, milk, pap, and various other concoctions, when a little warm water is all that is necessary, or at most a mixture of sugar and water, as follows: One rounding tablespoonful dextrimaltose to one pint water; give one ounce every four hours. And this abuse is continued all through life.

We American people eat too much and too fast. We put hot and cold, sweet and sour substances and all manner of combinations into our stomachs at the same meal. Some go so far as to habitually put poisons such as tobacco and alcohol into their stomachs, and then wonder why they have indigestion.

The functions of the stomach are threefold; *viz.,* secretion, absorption, and motility, and the most important is motility. Absorption is almost nil, only a few of the salts, alcohol and medicines are taken up by the lymphatics of the stomach. The secretions of the stomach are not really necessary for the existence of man; von Noorden has proved that a person can get along very well without his gastric juice. The motility, however, is very important and, as a matter of fact, the motor function is practically never impaired except when there is some mechanical obstruction at the outlet. Judging from this description of the stomach, you may think that the stomach is not an important factor in health or disease, yet you all know very well that no one can feel perfectly well and have good health if the stomach is in any way abnormal. The stomach is a factor in diseases other than those of the digestive tract. Take as examples, acute rheumatism, pulmonary tuberculosis, chronic nephritis or organic heart lesions: how can we administer the necessary drugs to treat these diseases, if the stomach is not in fit condition to retain and absorb them. I have just shown that drugs are absorbed by the lymphatics of the stomach. Or, how can we properly nourish such patients, if the stomach be so diseased or weakened that it can not retain the food taken, or properly mix it up and force it along into the intestines to be further digested and absorbed; and in the diseases named, diet and nourishment are indeed important.

The stomach itself is subject to various diseases, functional and organic, and in caring for these diseases let me suggest that we make a more definite diagnosis of stomach conditions than we have in the past. If we have a hyperacidity, let us find out if it be a hypersecretion or foreign acids due to fermentation or decomposition; if delayed evacuation, let us determine whether it be due to supersecretion, myasthenia, weak muscles or obstruction. This can be determined by the various tests such as duration test, water test, or fasting test. If due to obstruction let us determine if it is caused by carcinoma, ulcer near the pyloric end or just within the duodenum, some pressure from outside, or by adhesions causing bands or kinks.

An examination is not complete without an *x*-ray. This shows very plainly the location, shape and size of the stomach. It also gives a fairly good idea of its motility, for the longer the bismuth remains in the stomach, the weaker the motility. And after all, it is not of so much importance where we find the stomach, as it is to know how well it empties itself, for I have noted that of the three functions the motor is the most important.

Sometimes we may find a positive case of gastroptosis but let us not attribute all the symptoms the patient complains of to the ptosis until we find out how well the stomach empties itself, for sometimes a stomach can do this even though a marked degree of ptosis be present.

After satisfying ourselves as to the condition of the mouth, esophagus and stomach, let us turn our attention to the bowels. In my mind, this is one of the most important fields for any of us to search for information concerning health and disease. I shall not consider the bowels and rectum separately, for the symptoms and disturbances are practically the same, except in location.

The diseases of the intestines are even more extensive and common than those of the stomach. An enormous number of people suffer from irregularity of the bowels, diarrhea, constipation, or flatulence; so common are these that it is practically impossible to find, in civilized man, an adult with a normally functioning intestine. The great length makes it almost impossible to diagnose the exact location and character of disease. Test meals are not so valuable nor definite in determining the functions of the intestines as those of the stomach.

As the ash pan is to the engine, so is the lower bowel and rectum to the human body. There is where you look to see if the fuel has been properly consumed. I claim that no physician can correctly treat a case of indigestion or digestive disturbance, without at least making a macroscopical examination of the feces. Some physicians do not know the characteristics of normal feces. Some cases present a diarrhea with lessened absorption; but by far the greater number present a stasis with increased absorption. In diarrhea we have a depletion, but in stasis we have too much absorption of not only the digested food, but the toxins caused by the fermentation or putrefaction, the result of stasis. There may be many factors entering into the causation of intestinal stasis; one of the first is the use and abuse of artificial foods in the diet of infants. Indiscretion in diet all along through life is probably the greatest cause. Strenuous living, irregular habits as to time of eating, amount and quality of food, exercise and neglect in emptying bowels every day, enter into the cause. Sometimes constipation causes hemorrhoids: but very often hemorrhoids or anal fissure is the direct cause of constipation.

A general abdominal ptosis is usually associated with intestinal stasis. Inflammations, leaving adhesions, are the cause of most of the kinks found in the lower bowel.

When we find constipation we should endeavor to discover the cause and, before prescribing any line of diet or treatment, we should determine what form we are dealing with, whether atonic or spastic, for the diet and treatment are quite different. When we have indications of an absorption of toxins from the bowel, we should again try to discover which form we have. Bassler states that usually we have one of two forms, the putrefactive or indolic type (where indican appears in urine above the normal amount) and the fermentative or saccharo-butyric type. One rough way to determine this is to examine the feces in water. The indolic will sink, while the saccharo-butyric will float. He also states that a microscopical examination of stool, using Gram differential strain, helps determine the type of toxemia by showing the preponderance of certain forms of bacteria. The symptoms arising from these intestinal toxemias are many and varied. And there is no doubt in my mind but that this condition is the cause of much suffering in many individuals.

Most people seem to consider constipation only from the standpoint of difficulty or distress in defecation. It is not an easy matter to convince them that this is a trivial matter as compared to the damage being done to their whole system by the absorption of decomposing liquids in the bowels. Until you can get them to see it in this light you will never have their coöperation in your line of treatment. They will be perfectly satisfied, and in fact will demand some laxative pill to make their bowels move, rather than be willing to work with the physician in trying to remove the cause.

Imagine the condition of our health if we were compelled to drink sewage water; and yet this is exactly what these patients are doing. True it is that the easiest way to treat these cases is to give some pill as a physic, at first one at a dose, soon two, and after awhile, we discover the patient taking three or four, and asking for more. Then we think it is time to make a change to some other pill. Now this is being done every day. But the time is coming when this line of treatment will not be acceptable to the average person or satisfactory to the conscientious physician.

So let us begin now, and have our patients know when they come to us, that we will make a systematic, scientific search for the cause of their constipation or other digestive disturbance, and insist upon the patient's coöperation in the examinations and in carrying out the treatment. Many of their habits of living may have to be altered. A proper diet should be prescribed. We should remember, in making up this diet list, that the indolic type requires low protein and high carbohydrate, while the saccharo-butyric type requires just the reverse. Insist upon the patient taking plenty of water.

The matter of exercise is important. The indolic type needs rest: the saccharo-butyric type needs active exercise, and exercises bringing the abdominal muscles into play are especially valuable. Massage of abdomen should be employed in atonic constipation, but not in spastic form.

In the use of drugs, we should employ such as act mechanically. The Russian mineral oil is of value beyond any doubt; by softening the mass and lubricating the bowel. The agar preparations are also valuable, acting mechanically by increasing the bulk of fecal matter, and keeping it soft by the retention of moisture.

In certain forms of putrefaction or fermentation, antiseptics, especially ichthyol, or the Bulgarian bacilli, will do good. In atonic constipation with abdominal ptosis, supporting belts are valuable. Strips of adhesive plaster, properly applied, will answer the purpose. Flushing the bowels, either through duodenal tube, or colonic flushing with long rectal tube, will be indicated in some cases. If the *x*-ray shows distentions, displacements or kinks held fast by adhesions, surgical measures are indicated. Short circuiting and removal of part of the large and small bowels have been giving remarkably good results.

The effects of certain rectal diseases are so far reaching, that it will be impossible to cover them in this paper, but let me say that a normal, rectal region is certainly essential to good health and a comfortable existence.

You will notice that I have used the terms constipation and intestinal stasis interchangeably. I did so because these are different terms for the same condition. It is not the object of this paper to present any new discovery or method of my own; but simply to suggest that we be more definite and specific in our diagnoses of digestive diseases, and to call attention to the fact that there are various measures and tests to aid us along this line. The intelligent use of these tests will often give us a definite knowledge of the conditions we are dealing with. Furthermore, I have tried to present a few of the simple, common-sense methods of treating these disorders, as worked out by men of wide experience.

To summarize: Of the various systems of the human body, none is more essential to good health than the digestive system. Through the digestion of food it becomes the source of energy. It is a potent factor in combating diseases in other parts of the body. Owing to its abuse and its peculiar location, completely within the body, yet connected without, it is a vulnerable point for infection. Every organ in the body is dependent upon it to some extent.

Considering these facts I think you will agree with me that the digestive tract is a factor in health and disease.

FUNDAMENTALS OF CANCER.

BY J. C. SULLIVAN, M.D.,
Dubois.

(Read before the Clearfield, Jefferson and Elk County Medical Societies, at a joint meeting at Dubois, June 10, 1915.)

In view of the tendency to place treatment in the foreground and lose sight of the underlying principles of cancerous affections, it might prove interesting for us to consider the fundamental principles of carcinoma. How much reliable information have we to guide us in the management and treatment of cancer? There are two theories regarding carcinoma seemingly worthy of our consideration: (1) That cancer is caused by, as yet, undiscovered germs; (2) that carcinoma develops from epithelial cells which assume an abnormal growth, being perverted in the biologic state so that they penetrate the connective tissue and continue to grow without limit, a condition which can not at present be explained. From clinical experience the second theory seems the more probable, but the special conditions or factors which endow the epithelial cells with the energetic abnormal activity and cause them to grow on indefinitely, we do not understand.

Repeated irritations or repeated trauma are reputed to be the cause of carcinoma and are accepted clinically as being correct; however, many cancers start without any such irritative causes; so we must conclude that irritation, while the occasional cause, is not the real or only cause.

The theory has been advanced that through traumatism the epithelial cells are detached from their connection with the mother tissues, are forced into the connective tissue, and, becoming independent, they assume an abnormal growth.

They can grow to a state of activity very much like embryonal activity; but why the epithelial cells acquire this new property, we can not explain, except that there must be some factor or factors added to or withdrawn from the body which govern the tissue growth, the presence of which gives the cells new properties that disturb the normal tissue growth.

We may find it profitable to study cancers individually rather than as a group, because we are now situated, as was the medical profession several hundred years ago regarding infection; all infections were simply classed infections, no distinction being made between pyogenic germs, for their classification and modes of development were unknown. To-day a mere statement that a patient is infected would not be acceptable, as one must know what germ is the causative factor in order to act intelligently in the treatment of the infection. From this viewpoint, something fairly conclusive is shown by Rous in his chicken sarcoma; for instance, it is infectious and is caused by a filterable virus.

Probably as important as any of the facts already mentioned is the discovery of immunity to cancerous disease by the observation that mice which had been successfully inoculated frequently recovered spontaneously and, having recovered, could not be successfully reinoculated with the same tumor. Further, the blood of recovered animals has a slight immunizing if not curative influence when injected into inoculated animals in the early stages.

Our conception of cancer has been modified during the past few years, as we have been enabled to study its effects on the lower animals, principally on rats and mice. The clinical course of the disease under experimental conditions tended to established standards of comparison, previously impossible, which are as yet impossible in clinical observations in human beings.

Considering that cancer develops from preexisting normal cells, so changed as to make them cancer cells, possessing powers of limitless growth at the expense of the tissues invaded, you can readily see we have as yet but a very inadequate conception of its true nature. This is especially emphatic when we consider that in the once normal, but now abnormal cell, powers of growth are such that when transplanted in distant regions of the body, and finding suitable environments, they produce secondary growths, metastases. Not only this, but each growth possesses peculiarities all its own, as well as, in all probabilities, a period of metastasis coresponding to the special causative agent.

As research has progressed to the point where we are able to distinguish different kinds of cancer, as, for instance, the difference between a chicken and a rat sarcoma, it might be profitable for us to revise our classifications.

Payton Rous shows a group of sarcomas in chickens which presents all the characteristics of a genuine sarcoma. By this we mean that they fulfill all the requirements of laboratory manipulations demanded of a transplantable sarcoma, also present microscopically the true morphological picture of sarcoma.

Rous has shown us three distinct types of chicken sarcoma and that they are caused by a virus which may be filtered from the ground-up sarcoma cells, through a standard germ-proof filter. He describes three distinct varieties of chicken sarcoma, one a spindle-celled sarcoma, another a spindle-celled sarcoma with a peculiar growth, and the third an osteochondroma; the virus of each type producing the exact type from which it was derived.

The rat sarcoma experimentally differs in no essential from the chicken sarcoma of Rous, yet a virus can not be filtered from it capable of reproducing sarcoma.

For some time cancer investigators have known that a certain amount of resistance to implanted cancer can be induced in animals by inoculating with normal tissue, embryonic or adult, and even blood is capable of producing mild immunity. The best tissue is the spleen, as investigators have found that, by removing the spleen, animals become more susceptible to inoculation with cancer.

Dr. Murphy of the Rockefeller Institute obtained similar results by exposing rats and mice to the *x*-rays daily, with the object in view of injuring the lymphatics; by doing this he has been able to induce rat and mouse cancer to grow in animals of alien species, the tumors growing well until such time as the lymphatic apparatus recovers from the *x*-ray injury. It would seem that the immunity to neoplasms, to bacterial infection and even to alien normal tissues, is produced by the lymphatic apparatus, the principal organs of which are the spleen and the bone marrow.

Dr. Bastianella of Rome says:—

"In animals previously grafted, the new graftings are less apt to grow. It seems as though the animals acquired an immunity against the embryonal tissue.

"During the involution of the first grafting, it was possible to see that the cells died through dissolution of autocytolysis and it was thought that this process was providing the organism with substances capable of having an elective action on the cells of the new graft.

"In fact, preparing a liquid by leaving for a certain time aseptically embryonic tissue in salt solution, that is making an autolysis or dissolution of the tissue, and then injecting it in rats successfully inoculated and having grafts in full growth, it was possible to see these grafts disappear entirely.

"From that came the idea of trying the same in rats grafted with the so-called spontaneous cancer, which biologically runs in many ways similar to the embryonic tissue-grafting.

"The results were identical, and it was possible to cure animals having big growths which would have ended fatally, but not to immunize them against a tumor graft.

"The ulterior investigations of the factors, which may favor change of the conditions of growth of embryonic tissue of tumor grafts, have proved that these factors must be looked for in nutritive and formative substances produced by glands or organs of the body.

"Some of them favor the growth and they are called oncogenic—that is, having the property of stimulating tissue growth. Some act on the contrary, that is, they stop or destroy the tumor, and may be called oncolytic.

"These factors must be normally present in the body and regulate the normal growth, but occasionally the production of one or the other may be disturbed.

"It may even happen that a change in their mutual relations takes place, so that some cells or groups of cells already disturbed in their functions may be stimulated and pushed to an abnormal proliferation or not checked in their disordinate proliferation.

"The embryonic cell is the one which more easily responds to biochemic action.

"In our body are found groups of embryonic cells or tissues scattered in some organ, or on the other hand it may be that groups of normal cells displaced by trauma or stimulated by repeated irritations are put in an abnormal reproductive condition which is very near to that of the embryonic stage.

"It is very easy to think that these cells feel more deeply the influence of any perturbation in the proportion between the oncogenic and oncolytic factors, and begin to grow without any possibility for the body to stop them in their progress."

A close and systematic investigation of these organs and glands, which seem to have a greater influence on the growth of embryonic tissue and of experimental tumors, has demonstrated that the spleen and the genital glands act in opposite directions.

In 1904, Clowes showed that if the blood of a recovered mouse was mixed with a given proportion of cancer tissue to be used for inoculation, in many cases no growth resulted, thus demonstrating that the blood of recovered animals contains antibodies capable of acting upon the cancer cells in such a way as to deprive them of a cancer characteristic, the possibility of transplantation. Bashford has recently confirmed this observation as he has shown that when the cancer cells are injected into the circulation of resistant or recovered animals, they do not grow.

Goldman of Freiburg in the nineties made a careful study of breast cancers, and showed by sections under the microscope that the cancer cells penetrated the vessel walls and were free to be transported in the circulation from the beginning of the growth. He reasoned that if cancer cells find their way into the circulation in the early stages of the disease, but are unable to produce metastases, there exists an immunity to the cancer cells, probably active and present in the blood, which protects the individual until such time as the immunity fails in the latter stages of the disease.

Some unknown cause or causes stimulate the tissues to abnormal growth or the clinical course is modified by the development of or the preëxistence of certain immune substances in the individual.

It has been shown by experiments on animals inoculated with cancer, that if in the early stages of the disease a part of the tumor is removed, or hemorrhages are induced by manipulations or by injection of substances, the tumor will frequently retrograde and disappear; whereas, the same procedure in the latter stages of the disease simply causes rapid growth, a phenomenon evidently due to an immunity which arises in the course of development of the neoplasm.

A patient remaining in good condition, with a cancerous growth stationary or almost so for an extended period of time, no metastases occurring, must possess some degree of immunity, as such a state can not be explained in any other way.

Harvey R. Gaylord of the New York State Institution for the Study of Malignant Diseases states:—

> "In the Buffalo laboratory years ago, we were able to show that, when a tumor successfully inoculated into a mouse tends to remain stationary for a considerable period of time, repeated anesthesias with chloroform or ether, over a period of several days, will often cause the tumors to take on rapid growth; this rapid growth we must infer is due to injury to the immunity-producing mechanism, but whether the injury is due to destruction of antibodies in the blood or to damage of the organs which produce the immunity we do not know."

It suggests to us, however, the desirability of limiting the amount of anesthetics used in operations for cancer and possibly it would be better to operate on cancer patients with nitrous oxid anesthesia wherever possible. We should remember Ruben and Everet Graham have shown by experiments that prolonged anesthesias have a very unfavorable effect upon the course of ordinary bacterial infections.

The valid reasons for the early operation in cancer cases, therefore, are based not alone on the hope of complete removal of the growth, but upon the fact that early in the disease the processes of immunity are still active.

Maud Slye has attempted to prove by usage of Mendelian terms and theories that cancer is inherited, but the consensus of opinion of experienced observers does not agree with her "dominant" and "recessive" theories, regarding which, at the present time, there is a great difference of opinion even among the most intelligent students of Mendel's law.

In view of what is now known of cancer immunity and the loss or destruction of the immunity by injury to the lymphatic apparatus, we would conclude that the inherited quality is a hypersusceptibility to irritation or an inherited defect in the immunizing power of the patient.

Remember that in the treatment of pneumonia nothing takes the place of cool fresh air and absolute rest in bed.

RESULTS OF THE RECENT PROPAGANDA OF CANCER CONTROL.

BY JOSEPH COLT BLOODGOOD, M.D.,
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(Read before the Lackawanna County Medical Society, Scranton, June 29, 1915.)

We are already beginning to see the good results of the campaign of education. In every group the number of inoperable cases is growing less, the number of precancerous lesions is increasing, and there is also a great increase in the number of patients with early cancer. I am especially impressed with this improvement during the past two years, since 1913.

In 1913 I found a great improvement in the five-year period since 1908. I have published the figures in regard to the lip, the tongue and the breast, and more recently in regard to the stomach. Among the unpublished studies we have seen improvement everywhere in cancer of the skin and mucous membranes, in cancer of the colon and in cancer of the gall bladder. In all of these localizations the figures show a greater improvement in the last two years (since 1913) than in the previous five years.

In every case which has come under observation since 1913 I have carefully studied the educational factor. The patients themselves understand the situation better, because we have talked to them more freely and understandingly. Many of our early cases have been referred by patients, and there has also been a tremendous awakening among the general practitioners. The majority of these physicians who had previously referred late cases are now sending their new cases earlier. Patients coming from physicians who had not before referred cases, come in a much earlier stage of the local disease. In this group the education has been due to direct contact. The new factors in regard to cancer have been passed directly from the surgeon to the physician and to the patient, and in this way new cases have been reached.

In addition, the profession has taken a widespread interest in the publications in medical journals, and the laity, in the reports which have appeared in the various types of newspapers, magazines, etc. The entire people seem interested in whatever is published in regard to cancer, and in the majority of cases it is a normal attitude of mind and not idle curiosity. They seem to understand the message of information and are made hopeful rather than fearful. The feared cancer neurasthenia has not developed to any great extent. Personally I have seen no signs of any harmful results.

There is no doubt that the Medical Society of the State of Pennsylvania deserves great credit for the splendid pioneer work of its Commission on Cancer of which Dr. Wainwright of Scranton is chairman. Apparently this is not only the first state commission, but also the one which has done the most effective campaign work. The last efforts of this commission have been unusually successful. Through its suggestion the majority of medical journals throughout the country have devoted their July numbers to articles on cancer, and most of the county medical societies throughout the United States have held professional or public meetings at which the problems of cancer have been discussed.

It is not necessary here to go into the history of the cancer campaign of education, except to mention a few epoch-making factors. Undoubtedly the Committee of the Clinical Society of Surgeons of North America, under the chairmanship of Dr. Cullen, not only began at the psychological moment, but in the most impressive and efficient way by its articles in the lay press written by Adams.

The formation of the American Society for the Control of Cancer in New York City made the propaganda national, and through the efforts of its executive secretary, Mr. Lakeman, the work is moving along as rapidly as possible.

Following this, the Council on Health and Public Instruction of the American Medical Association has begun a remarkable campaign in its numerous cancer pamphlets which have been distributed by the thousands to the lay and public press of North America. Dr. F. R. Green, the executive secretary of this council is in charge of this propaganda. Apparently all the different agencies are working together in full harmony.

While we are educating the public about the early signs and symptoms of things that may be, or may develop into cancer, there is an equal necessity to educate the profession in general, and the operating surgeons specifically, in regard to the diagnostic methods and the methods of treatment in the earlier stages. In these stages it is major diagnosis and usually minor treatment. But in these stages the results of proper treatment are the very best, and of improper treatment often the very worst. It is our obligation to be prepared to give these patients who seek advice in this earlier stage the benefit of the very best treatment. There is to-day in the majority of instances sufficient knowledge as to the proper method of diagnosis and a sufficient uniformity of opinion as to the appropriate treatment, but this knowledge is by no means thoroughly appreciated by all the profession. Everyone should feel the necessity of keeping up to date by reading the available literature and by visiting the great clinics of this country where one can see and hear.

In the June number of the *Southern Medical Journal* I have contributed a short article on the cancer problem. In this paper I have shown that the majority of individuals, if left to themselves, will not seek advice for treatment until the local lesion has become a fully developed cancer. In this stage, in about fifty per cent. of the cases, the neoplasm has become either inoperable because of local infiltration or hopeless because of remote metastasis. In the remaining half, complete operations are possible, but the usual per cent. of cures at the end of five years is, as a rule, about fifty per cent. This demonstrates that the chance of a cure, if the patients are not educated and are left to seek advice of their own volition, is on an average about twenty-five per cent.

The figures may vary with cancer in different localizations and in different clinics, but up until seven years ago these figures were pretty uniform in the various great clinics throughout the world. In my own observation the first distinct improvements began in about 1908 and greater signs of improvement have appeared in the past two years. To me this evidence offers the greatest hope for what we may ultimately expect for the control of cancer.

EVERYBODY IS WARNED.

There seems little doubt that in the great majority of cases of cancer there are definite appreciable warnings at the onset, at least in the stage when the probabilities of a cure after appropriate treatment are the very best. But both the public and the profession need education as to these warnings.

Apparently there is very little difference between the first signs and symptoms of a local trouble which is not and may never develop into cancer and the signs and symptoms of a local condition which is cancer or may develop into cancer.

Undoubtedly it is this state of affairs which has influenced both the people and the profession to delay, and has, so to speak, put them off their guard. There seems no doubt that many experience warnings of this kind, but that few ultimately become cancer victims. I mean few relatively, but the aggregate of cancer victims is huge; in this country in one year perhaps 75,000. The enormity of the number gains in impressiveness when we know that a very large majority could have been saved by proper information followed by immediate and good surgical treatment.

EXAMINATION FIRST.

If these warnings are heeded the most important thing to be done first is to have a thorough examination. The type of the examination differs as the locality of the signs and symptoms differs, but there is apparently no question that before any treatment is instituted every known method of examination should be employed to ascertain the nature of the trouble.

New Clinical Pictures. When our patients are educated to seek advice immediately after the first warning, we must prepare ourselves for conditions which we have not seen before and also for diseases with which we are familiar only in the later stages and the clinical picture of which in the early stage may be entirely different. We will see many conditions which before we did not see, because they gave so little trouble and excited so little anxiety that the patient waited for something more serious to develop, and as nothing developed and warnings disappeared, they did not come under medical observation. In this group we must be most particular to avoid unnecessary interference.

This educational propaganda on cancer will at first increase the difficulties of diagnosis, but there is no question as to the great improvement of the results if the correct diagnosis is made and the appropriate treatment immediately follows. These statements are true of local lesions no matter where they may be situated.

The most common positions for cancer are the uterus, the female breast, the skin and accessible mucous membranes of the mouth and within the abdomen especially the stomach and colon. Less frequent localizations are bone and the soft parts beneath the skin. Fortunately the most frequent situations of cancer are the most accessible for surgical treatment.

CANCER OF THE UTERUS.

The first warnings of cancer of the cervix or body of the uterus are irregularities in the menstrual flow, especially excessive bleeding; or bleeding or some form of discharge between the menses; or the reappearance of a bloody flow after the menopause. There seems no doubt, however, that these symptoms are associated with many local and general conditions which are not malignant and do not develop into cancer. Many get well without treatment, but there is absolutely no way of differentiating the benign from the malignant, except by a most careful pelvic examination by an expert and in the majority of cases by the microscopic examination of tissues removed from the cervix and mucous membrane of the uterus by curetting.

The interpretation of the microscopic picture is by no means a simple one. Nevertheless, if cancer is recognized in this stage, the probability of a cure is the best; we never can get it earlier.

In the last fifty patients at the St. Agnes Hospital in Baltimore curetted for symptoms mentioned above there has been but one case of early cancer revealed. This patient undoubtedly will be cured. During the same period there have been about six cases of cancer which were recognized by palpation and inspection; four of these cases were inoperable, and it is questionable whether there is much chance of a cure in the remaining two.

The majority of surgeons with experience in cancer of the uterus have come to the conclusion that when the cancer can be recognized by inspection or palpation, the probability of a cure, even after the most extensive hysterectomy with removal of the glands, is very small.

Every female patient admitted to a hospital should be carefully questioned as to her menstrual history and should be thoroughly instructed, so that if after she leaves the hospital such symptoms should develop, she would return at once for a thorough examination.

It is quite possible that the curetting of the uterus for these symptoms, in which the microscopic examination for cancer is made, may remove a source of local irritation and protect the woman from cancer. The repair of a lacerated cervix, or the amputation of an ulcerated cervix may also be a protective procedure.

There is great opportunity for an investigation along this line. We have decided to make such an investigation at St. Agnes Hospital. As this hospital has been in existence only nine years the number of cases is not so large as to make the investigation difficult. We propose to find out the present condition of every woman recorded in the hospital and see whether we have overlooked cases of cancer which have developed later.

They will be divided into the following groups: A, patients admitted with fully developed cancer of the cervix or uterus, recognized by palpation or inspection only; B, those admitted with menstrual irregularity, or bleeding after the menopause, and cancer revealed by the microscopic examination of the curettings; C, those admitted with the same symptoms, but the microscopic examination of the curettings negative; D, those admitted with the same symptoms, but curetting not done; E, patients with normal menstrual histories; F, patients whose menstrual histories have not been recorded.

If we find that carcinoma has developed in Group D, we should feel the responsibility and appreciate our neglect in not curetting for a microscopic examination. If cancer has developed in Group F and we find that the patient did have menstrual irregularities while under our care in the hospital, we should also feel that we have neglected our full duty. If carcinoma developed in a patient of Group C we would be forced to conclude that our microscopic interpretation may have been at fault.

We propose in St. Agnes Hospital to have a definite single history-sheet devoted entirely to the subject of menstrual irregularities and pelvic examination, so that this part of the examination will never be neglected. In the future we also propose to instruct every female patient in regard to these points.

In the gynecological departments the medical record is usually complete, but in other departments, unless insisted on by the patient, it is often conspicuous by its absence.

There seems no doubt that we have in a system of this kind the best opportunity for a protective investigation and a system of education which will be protective. As far as I know a scheme of this kind has never been instituted embracing all the female patients of a large general hospital.

CANCER OF THE STOMACH.

I have just presented the medical aspects of this problem.[14]

The experience of the surgical clinic of the Johns Hopkins Hospital and of the surgeons connected with this clinic who also have other hospital connections, has been distressingly bad. In twenty-five years among 184 cases, in 74 per cent. the lesion of the stomach has been inoperable. In the first fifteen years but 35 cases of cancer of the stomach came under observation of the surgeon. Of these only 9, or 25 per cent., were operable. In the next five years (1905 to 1910) the total number increased to 76 cases, but the operable cases (12) fell to 16 per cent. That is, more cases were referred to surgery. Fortunately in the next five years (1910 to 1915) a favorable change has been observed. The total so far is 73 cases, of which 39 per cent. were operable. The number of permanent cures up to 1910 (that is five years after operation) has been but 2, or 10 per cent. of the operable cases, and 1.7 per cent. of the entire number, 111.

When we study the total duration of the symptoms before operation, we find that in 57 the patients had been continuously ill for less than six months, in 115 from six months to six years or more.

The symptoms of onset in these patients, who have ultimately come under observation with cancer of the stomach, have not been at all specific, so far as I am able to make out from the records.

There is no appreciable difference between the early symptoms of ulcer and cancer, or of local lesions situated outside of the stomach, such as cholecystitis, pancreatitis, appendicitis, and even stone in the kidney and some pelvic lesions, or from indigestion of types not associated with organic lesions. At least with our present knowledge the early warning of things that are not and do not develop into cancer is not different from the warning of lesions that are and do develop into cancer.

In this early stage the individual warned should have a most careful general examination. In addition, there should be repeated studies of the gastric secretion and numerous *x*-ray investigations. Treatment often gives only temporary relief in malignant disease.

Indigestion, however, of various types is such a common condition, and the number of cases of cancer explaining this indigestion so relatively small, that the majority of people either first try domestic remedies, or, if they seek professional advice, receive treatment and do not get the thorough examination until too late a period.

I am quite certain that the majority of surgical clinics of this country can not show any better condition of affairs than the observations which I have published.

Outside of the contributions from the Mayo Clinic there is little available literature in the United States. It is my recollection that in the Mayo Clinic their inoperable cases have been about thirty-nine per cent., which is far better than our best figures in the last five years, showing an inoperable per cent. of sixty-one. I am quite confident that in the Mayo Clinic they have observed an increasing number of operable cases of cancer of the stomach and an increasing number of permanent cures. Nevertheless their warning as to the relation between cancer and ulcer of the stomach is by no means universally accepted by the medical profession. I am confident that when this warning is appreciated we will observe a distinct improvement throughout the country in the results of treatment of cancer of the stomach.

CANCER OF THE COLON.

My studies of 85 cases of cancer of the colon are not yet published, but the data have been sufficiently worked up to indicate that the average patient does not heed the first warning of a lesion of the colon. Until recent years most of the patients with lesions of the colon which have been operable have been admitted to the surgical clinic with acute or chronic obstruction. Of course, with such symptoms they had no choice as to operation. Everyone now agrees that acute intestinal obstruction is a surgical condition. When these patients have recovered from their colostomy, resection of the colon has been possible and a large number of these cases have been permanently cured. As obstruction usually develops in cancer of the left colon, a large number of the tumors in our permanently cured cases have been situated in the sigmoid. Cancer is about equally as frequent in the cecum, but as obstruction is rare, these patients usually come under observation when the condition is inoperable.

It is unnecessary to wait for acute obstruction to diagnose a cancer of the colon. The patients have definite first warnings; at various periods after eating they experience pain of the type of colic. When the lesion is in the cecum this pain is experienced two or three hours after eating; if the tumor is in the sigmoid, later. The colic does not appear every day, the free interval may be quite long. The patients are more apt to have colic after a heavy meal, and especially with constipation. In some instances the colic is of sufficient severity to require morphin and may be associated with transient distention, belching of gas, nausea and even vomiting. Restriction of diet and cathartics temporarily relieve the attack.

In cancer of the right colon there is often a liquid stool after the first solid evacuation, in some cases an intermittent diarrhea, in others a chronic diarrhea. Many of our patients had been treated for a year or more for chronic colitis, or for neurasthenia with colitis. Blood in the stool is rarely observed. In cancer of the left colon diarrhea or loose stools is less frequent; blood more frequent. The sudden appearance of constipation in an adult is a very suspicious sign. Many patients mention a persistent area of localized pain or discomfort, a feeling of distention. In cancer of the transverse colon, gastric symptoms may predominate. The palpation of a tumor is a rather late sign.

If patients are educated to heed warnings of this kind, they should receive a thorough examination. They should be starved a few days, the colon evacuated by cathartics and enema, to allow deep and thorough abdominal palpation and for proctoscopic examination. Then there should be an x-ray picture after a bismuth enema and studies of x-ray plates after bismuth by mouth. I am confident that after such an examination cancer of the colon will be demonstrable if present, and our evidence also shows that the probabilities of a cure should reach over ninety per cent. The operation of resection of cancer of the colon in the early stage is devoid of danger in the hands of a surgeon with experience in resection and suture.

CANCER OF THE RECTUM.

This is by far the most common situation in the colon, 120 cases as compared with 85 in the abdominal colon. The failure to get cancer of the rectum early is entirely due to neglect on the part of the patient or his physician. These patients are warned in a very early stage by local discomfort, by difficulty in evacuation, by the appearance of blood. In the majority of the cases a simple rectal examination will reveal the condition. In every case the examination with the proctoscope will bring the local lesion within the field of vision.

CANCER OF THE GALL BLADDER.

The experience of the Surgical Clinic of the Johns Hopkins Hospital and of St. Agnes Hospital with our recorded cases of lesions of the gall bladder and the ducts is being worked up by Dr. R. J. Cook. We know the ultimate results in almost 90 per cent of the cases. In a group of 600 so far investigated there have been 60 cases of cancer, or 10 per cent. In 57 of these cases the condition was inoperable, in only 3 cases has complete cholecystectomy been possible. These have all occurred in the last year.

In these 57 inoperable cases the total duration of the gall-bladder symptoms, with or without attacks of jaundice, has been four years. There is no doubt, therefore, that all these patients could have been explored earlier. Cancer of the gall bladder has never been observed in a patient with gall-bladder symptoms lasting one year. The frequency, therefore, of cancer of the gall bladder in patients with symptoms of more than one year's duration is evidence which should be heeded. This problem will be fully considered in a paper soon to be published.

CANCER OF THE FEMALE BREAST.

In a previous publication[8] I called attention to the following table:—

	1908.	1913.
Inoperable	27.5 per cent.	18. per cent.
Recurrent	9. “ “	6. “ “
Five-year cures	35. “ “	42. “ “
Local recurrence	10. “ “	10. “ “

Here we have definite evidence of an increase from thirty-five to forty-two per cent. in five-year cured cases. As there has been no change in the operation this improvement must be attributed to earlier intervention.

We have other figures to prove the better results of the more prompt surgical treatment of a palpable lump in the breast.

In women who have come to the surgical clinic with tumors of the breast in which there were no external signs of cancer, and when at the operation the tumor had to be explored first and the diagnosis made at this exploratory incision, the complete operation for cancer has followed the exploration at once.

There are 15 examples of adenocarcinoma in which five years or more have elapsed since the operation; all (100 per cent.) are cured.

There are 12 examples of fully developed cancer of the scirrhous or medullary type; 85 per cent. are well five years or more since operation.

In the group in which the diagnosis of malignancy could be made because of adherent skin, retracted nipple, or ulceration, the operation has been performed without an exploratory incision. In adenocarcinoma the per cent. of cures has fallen from 100 to 64. In the fully developed cancer the per cent. of cures has fallen from 85 to 33.

Let us concede for a moment that the 15 cases of early adenocarcinoma in which there has been 100 per cent. of cures were not cancers. Then the figures are about 85 per cent. for early intervention in fully developed cancer, and 33 per cent. for late intervention. This difference is sufficient to illustrate the importance of looking upon a lump in the breast as an acute disease.

The figures for 1915 are not yet complete, but they already show a distinct improvement along the following lines: There is a steady increase in the relative number of distinctly benign tumors of the breast and in a group of border-line tumors in which there is considerable difference of opinion whether they should be looked upon as adenoma or adenocarcinoma. Then there is a distinct increase in the relative number of adenocarcinomas with areas of fully developed cancer. Associated with this definite increase in these three groups there is a very appreciable decrease in the number of fully developed cancers.

In addition to this most hopeful evidence there is one other factor that can be easily demonstrated—the duration of the known presence of the lump is getting shorter. That is, women are seeking advice earlier.

Up until 1908 the relative proportion of cancers of the breast in which it was necessary to explore to make the diagnosis was about 10 per cent. In the next five years it increased to about 15 per cent.; in the next two years it would appear as if the increase would be to 25 per cent. The number of cases is so large that I have been unable to complete the figures for this article.

This evidence demonstrates that the surgeon must prepare himself to meet perhaps one of the most difficult diagnostic problems, the differentiation at the exploratory incision between a benign and a malignant tumor of the breast.

There should be no difficulty in recognizing the fully developed scirrhus or medullary carcinoma at the exploratory incision. Its gross appearance is distinct; the lesion never has a capsule, although it may be circumscribed. The frozen section should present no difficulties of interpretation, but the number of these cases of fully developed cancer readily recognized by the gross appearance or the microscopic picture, is growing distinctly less as the educated woman comes earlier for treatment.

In the earlier form, where, mixed with the adenocarcinoma, there are areas of fully developed cancer, the problems of diagnosis are more difficult than in the first group. These tumors as a rule can be recognized from the gross appearance. There is always distinct infiltration outside of the main tumor area, but when we make a frozen section, there may be revealed only the adenomatous part. It is safer in this group to depend upon the gross appearance and perform the complete operation for cancer.

In the third group the diagnostic difficulties stand out prominently, and we are confronted with the fact that if the proper operation is performed the chances of a complete cure are best in this group.

As I have submitted almost fifty such cases to the expert pathologists in New York, Philadelphia, St. Louis and Detroit, I am compelled to conclude, as they did, that we can not depend on the microscopic interpretation. In each one of these tumors the pathologists were divided into two groups, one in favor of a diagnosis of cancer, the other of a benign lesion. There was not unanimous agreement in a single case.

The ultimate results, however, in these fifty border-line cases were the same; every patient was apparently well five years or more after operation. Among these fifty cases, in some the tumor only had been removed, in others the breast, in still others the complete operation for cancer had been done.

The pathologists who attended these conferences were unanimous in their opinion that the decision of the surgeon as to what to do would be better guided by his knowledge of the clinical history, and his inspection of the gross appearances. A frozen section should be made, because it might reveal, on one hand, a distinctly benign lesion, or, on the other, a distinctly malignant one.

In solid tumors a distinct capsule favors benignity. These tumors can be enucleated from the surrounding breast tissue. As a rule they have an intimate attachment at one point. They, however, should not be enucleated, but excised with a zone of surrounding breast tissue.

These distinctly encapsulated benign tumors of the breast are cystic adenomas, fibroadenomas, or intracanalicular myxomas. Apparently there is no difficulty in recognizing the intracanalicular myxoma. It has also a very distinct histological picture, and so far I have found no differences of opinion in the microscopic interpretation of sections from this group.

But the microscopic appearance of the cystic adenoma or of the fibroadenoma presents difficulties, because in the group of fifty cases mentioned above there were a few of such cases giving rise to the difference of opinion already noted. If these patients had been operated on in the surgical clinics of those pathologists who diagnosed them cancer, they would have been subjected to the complete operation for cancer and undoubtedly would have appeared later as cured cases of cancer.

The cystic tumors of the breast apparently give rise to the greatest difficulties in the frozen-section diagnosis. There is first, the simple cyst of the breast, a distinct capsule, smooth inner wall, no papilloma; the content is never bloody or grumous, it is clear or cloudy. When the cyst is first revealed at the exploratory incision and before it is incised it presents itself as a blue dome. The moment the cyst is opened this color disappears. When this cyst is cut out we may reveal, in cutting through the breast tissue, areas containing other cysts, and dilated ducts filled with pastille or greenish material. In my experience of twenty-five years with almost two hundred cases I have never been able to see any relation between this cyst and cancer. Among the sixty women in whom the operation consisted of excision of the cyst only, there has been observed but one instance of development of cancer in the remaining breast, and in this case the cancer did not develop in the scar of the previous operation. However, when sections from the walls of such cysts were shown at these pathological conferences, in every one of the cases some of the pathologists diagnosed cancer.

The cyst with the papilloma gave rise to the same difference of opinion. We have sufficient evidence to show that cancer is a rather frequent development in such cysts. When are we, therefore, justified in removing the cyst only? The gross appearance is most helpful. In the benign cyst the papilloma springs from a distinct cyst wall, and there is no infiltration of the breast beyond this wall.

Galactoceles also present difficult problems in diagnosis. The galactocele itself presents a pretty distinct gross picture, a smooth-walled cyst with milky contents. But outside of this cyst the breast tissue is often still in a stage of lactation hypertrophy usually associated with chronic mastitis. This pathological condition is difficult to distinguish from one of malignancy, both from the gross appearance and in the frozen section. I was surprised to find that the sections of breast tissue in the wall of an abscess of the lactating breast gave the pathologists at this conference a distressing dilemma. In all of the cases submitted there were some diagnoses of cancer.

The common benign cysts of the breasts, therefore (simple cysts, galactoceles, papillomatous cysts and chronic mastitis abscesses) are more difficult to recognize in the microscopic section than at the exploratory incision, if the surgeon has the experience. That is, a pathologist with equal experience in microscopic diagnosis can not compete here with the surgeon with the same relative experience in clinical and gross diagnosis.

The typical cancer cyst offers no difficulty to recognition. In one type we have a smooth wall with hemorrhagic contents or grumous, thick material. In the other, the malignant papillomatous cyst, the papilloma has become a fungous mass and the base is infiltrating through the cyst wall into the surrounding breast. These cases also offer no difficulty in the frozen section.

The most common lesion among these fifty border-line cases submitted to the conferences above mentioned, was neither an encapsulated tumor, nor a single cyst of any of the types described. The lesion was a diffuse change in an area of the breast, rarely even circumscribed. This area, as a rule, presented minute cysts with fluid, semisolid contents, or distinct epithelial intracystic growths, microscopically resembling the encapsulated tumors called cystic adenoma. This lesion has been variously called diffuse papillary adenoma, cystadenoma, chronic cystic mastitis, abnormal involution, Schimmelbusch's or Réclus' disease. We can recognize a type in which, in the microscope, the picture is still one of a benign cystic, or papillary adenoma. Then we meet cases in which the histology changes, and there are areas of malignant adenoma. In this group, now and then the glands in the axilla may show metastasis. In the third group, areas of fully developed cancer can be recognized without the shadow of a doubt, but the glands do not always show metastasis.

I have seen about thirty-five cases which belong to the first two groups and about an equal number in the third group. I have studied these cases year after year, again and again, and at the present time it is my opinion that the safest thing to do is the complete operation for cancer. If this is done in the first two groups the chances of a cure are 100 per cent., in the third group over 90 per cent. It is quite true that some patients of the first two groups have remained well after the removal of the breast only, and a very few cases in which the lesion was in its very earliest stage have failed to show recurrence after excision of the zone of breast only.

The differential diagnosis, clinically, at the exploratory incision and with the frozen section, is at the present time too difficult. The safest thing for the patient is the complete operation for cancer.

If the surgeon of experience carefully ascertains the clinical evidence and then, at the exploratory incision, inspects critically the local growth and the surrounding breast tissue, he should be able to decide on the safest plan of procedure. Less experienced surgeons may feel the necessity of help from the frozen section. I am quite certain that if the rule of performing the complete operation for cancer is followed in all cases of doubt, the incomplete operation for cancer of the breast will never be done, but in a certain number of cases varying from ten to twenty per cent. the radical procedure will be unnecessarily performed. But everyone seems now agreed that this is the better mistake. In fact, it is the only mistake that should ever be made. An incomplete operation for cancer of the breast in the great majority of cases dooms the patient to death from cancer.

In a second paper I shall bring out the lesions of the breast in which operation is not indicated. Now that women are seeking advice earlier, we are seeing more and more examples of those benign conditions which formerly disappeared, because the patient waited.

CANCER OF THE LIP.

In a contribution,[10] based upon a study of 200 cases, the evidence showed that the educational propaganda had increased the benign lesions of the lip from 4 to 18 per cent. and decreased the inoperable from 18 to 8 per cent. The figures since 1913 are not yet complete, but the investigation so far shows that there has been a tremendous increase in benign lesions and early cancers. As my former contribution is in such an accessible journal, I will take no further space for discussing this problem here, except to state that it would appear as if the problem of cancer of the lip were settled. Perhaps we need further investigation as to the best method of the operation on the glands of the neck. In a short time we will be able to publish the figures up to 1915.

CANCER OF THE TONGUE.

An abstract of a study of 100 cases has already appeared.[7] In this group I get the impression that the educational propaganda has produced a greater effect than in any other group. For example, in 1913 there were 9 benign lesions of the tongue which had been observed since 1908. In the eighteen years before 1908 there were 6 benign lesions. Since 1913 we have operated on 10 benign lesions of the tongue and have records of almost 20 not subjected to operation; that is, lesions which have disappeared under appropriate treatment. At the same time we have operated on 8 early, but definite, cancers of the tongue, cancer of the tongue in a stage which we rarely, if ever, saw before 1908.

The operative treatment of these early cancers of the tongue has not been a mutilating one, the chances of a cure are over ninety per cent., and, so far, all but one of these patients are well. In this one case a piece was excised for diagnosis two weeks previous to patient's admission to our clinic. In a second paper about to be published on cancer of the tongue I will employ this case as additional evidence of the danger of cutting out pieces of cancer with the knife for microscopic study.

PERSONAL CONTRIBUTIONS TO THE PROBLEMS OF CANCER CONTROL.

1. "The Added Responsibility of the Surgeon when Called on to Treat Surgical Lesions in Their Earlier Stages," *Jour. A. M. A.*, Sept. 20, 1913, Vol. LXI., p. 911, read before the Surgical Section of the American Medical Association in the previous June.
2. "The Great Danger of Incomplete Operation for Cancer in the Early Stage of the Disease," *Medical Herald*, Kansas City-St. Joseph, Mo., Nov., 1913, read before the Missouri Valley Medical Society, March 21, 1913.
3. "Can It Be Proved from Clinical and Pathological Records that the Number of Cures of Cancer Will Be Greatly Increased by the Proper Excision in the Earliest Precancerous or Cancerous Stage of the Local Disease?" *Am. Jour. of Med. Sciences*, Jan., 1914, Vol. CXLVII., p. 76, read before the American Association for Cancer Research, Washington, D. C., May, 1913.
4. "Diagnosis and Treatment of Border-Line Pathological Lesions," *Surg., Gynec. and Obst.*, January, 1914, Vol. XVIII., p. 19, read before the American Surgical Association, Washington, D. C., May 8, 1913.
5. "Control of Cancer," *Jour. of A. M. A.*, Dec. 27, 1913, Vol. LXI., p. 2283, read before the Lehigh Valley Medical Association, June 17, 1913.
6. "Cancer Control," *Boston Med. and Surg. Jour.*, Nov. 27, 1913, Vol. CLXIX., p. 792, read before the Clinical Con-

gress of Surgeons of North America, Chicago, Nov. 13, 1913.

7. "The Cancer Problem from the Standpoint of the Laity, the General Practitioner and the Expert Surgeon," *Southern Med. Jour.*, Jan., 1914, Vol. VII., p. 20, address before the public session of the Southern Medical Association, Lexington, Ky., Nov. 19, 1913.

8. "Cancer Control," *Jour. of the Med. Soc. of New Jersey*, 1914.

9. "Precancerous Lesions," *Long Island Med. Jour.*, May, 1914, read before the Brooklyn Pathological Society, Jan. 5, 1914.

10. "Carcinoma of the Lower Lip; Its Diagnosis and Operative Treatment," *Surg., Gynec. and Obst.*, April, 1914, Vol. XVIII., p. 404.

11. "Cancer of the Tongue, Based upon the Study of Over One Hundred Cases," *Jour. of Iowa State Med. Soc.*, June, 1914.

12. Transactions of the American Surgical Association, 1914. Paper read before the American Surgical Association, New York, April 9, 1914.

13. "What Every One Should Know about Cancer," Prevention of Cancer Series, Pamphlet No. 1, issued by the Council on Health and Public Instruction of the American Medical Association.

14. "Stomach Carcinoma, Its Medical Aspects," *Jour. of A. M. A.*, June 19, 1915, Vol. LXIV., p. 2031, address of the president before the American Gastroenterological Society, Baltimore, May 10, 1915.

"ARTICLES OF FAITH" CONCERNING CANCER.

A PLATFORM UPON WHICH TO UNITE IN THE CAMPAIGN OF EDUCATION.

(During the four-day Cancer Educational Campaign, held under the auspices of the Vermont State Medical Society, June 8-11, 1915, Dr. William Seaman Bainbridge of New York City presented the accompanying twenty-one "Articles of Faith." They form the conclusion of a paper entitled "The Cancer Patient's Dilemma. A plea for the Standardization of What the Public Should be Taught in the Campaign of Education Concerning Cancer," which appears in the *New York Medical Journal*, July 3, 1915.)

Pending the time when such conditions shall be brought to pass, it seems best that the campaign of education against cancer should take note of the following facts, and disseminate knowledge along the lines indicated.

1. That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the light of our present knowledge, they hold no special element of alarm.

2. That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

3. That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

4. That those members of the public in charge of or in contact with sufferers from cancer with external manifestations, or discharges of any kind, need at most take the same precautionary measures as would be adopted in the care of any ulcer or open septic wound.

5. That in the care of patients with cancer there is much less danger to the attendant from any possible acquirement of cancer than there is of septic infection, or blood poisoning from pus organisms.

6. That in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of distinct value.

7. That, notwithstanding the possibility of underlying general factors, cancer may, for all practical purposes, be at present regarded as local in its beginning.

8. That, when accessible, it may, in its incipiency, be removed so perfectly by radical operation that the chances are overwhelmingly in favor of its non-recurrence.

9. That, when once it has advanced beyond the stage of cure, suffering in many cases may be palliated and life prolonged by surgical and other means.

10. That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest present means of cure.

11. That among the many advances in and additions to cancer treatment, the improvements in and extensions of surgical procedure surpass those in any other line, and fully maintain the preëminent position of surgical palliation and cure.

12. That there is strong reason to believe that the individual risk of cancer can be diminished by the eradication, where such exist, of certain conditions which have come to be regarded as predisposing factors in its production.

13. That some occupations, notably working in pitch, tar, paraffin, analin or soot, and with *x*-rays, if not safeguarded, are conducive to the production of cancer, presumably on account of the chronic irritation or inflammation caused.

14. That prominent among these predisposing factors, for which one should be on guard, are general lowered nutrition; chronic irritation and inflammation; repeated acute trauma; cicatricial tissue, such as lupus and other scars, and burns; benign tumors—warts, moles, nevi (birth-marks), etc.; also that changes occurring in the character of such tumors and tissues, as well as the occurrence of any abnormal discharge from any part of body, especially if blood-stained, are to be regarded as suspicious.

15. That while there is some evidence that cancer is increasing, such evidence does not justify any present alarm.

16. That suggestions which are put forward from time to time regarding eugenic, dietetic and other means of limiting cancer, should not be accepted by the public until definitely endorsed by the consensus of expert opinion. Such consensus does not exist to-day.

17. That so far as we know there is nothing in the origin of cancer that calls for a feeling of shame or the necessity of concealment.

18. That it will be promotive of good results if members of the public who are anxious about their health and those who wish to preserve it will, on the one hand, avoid assuming themselves to be sufferers from one or another dreadful disease, but, on the other hand, will submit themselves periodically to the family physician for a general overhauling.

19. That at all times and under all conditions there is much to be hoped for and nothing to be feared from living a normal and moderate life.

20. That the finding of any abnormal condition about the body should be taken as an indication for competent professional and not personal attention.

21. That watchwords for the public until "the day dawns" and the cancer problem is saved, are alertness without apprehension, hope without neglect, early and efficient examination where there is doubt, early and efficient treatment when the doubt has been determined.

CANCER IN THE FAMILY.

Perhaps nothing causes more needless worry than the fact that one or more persons in a given family have died from cancer. This is commonly taken as proof that the disease is hereditary. This does not at all follow. There is probably no greater chance of inheriting cancer than there is of being killed by lightning or of breaking one's neck falling down stairs. Perhaps there are people who worry even about those contingencies but the statisticians have shown that such fatal accidents are extremely rare. People who are concerned because their relatives have succumbed to cancer fail to consider how widespread the disease is. A malady that causes one death out of every eight among women and one out of every fourteen among men over forty is fairly common. On this basis it does not take much arithmetic to figure out how likely it is that cancer will occur many times in some families. The eminent statisticians, King and Newsholme, have pointed out that it does not prove heredity to show that in one family five deaths occurred from cancer. By the very frequency of the disease, and the laws of chance, such cases would be expected even if no one had ever suggested the idea of heredity. It can be mathematically demonstrated that if a sufficient number of people start to toss coins it is a certainty that at least one of them will toss 1000 consecutive "heads." So with cancer; given a sufficient number of familes it is certain that many members of some few families will die of this disease. Therefore it is not necessary to assume that the disease is inherited to account for its frequency. Sometimes this fallacy crops out when certain notable cases, such as the Bonaparte family, are cited. It should be remembered that the rarity of such cases of apparent heredity tends to prove the very opposite. Such cases are so noticeable that they are remembered. If the cancer tendency should disappear in such a family no further attention would be paid to the supposed danger. If such family histories resulted from actually inheriting the disease, rather than from chance, they would be far more commonly reported. It is possible that certain forms of malignant disease may, under rare conditions, be transmitted to the child. Cancer is a very large word, covering a number of widely different diseases. It may be, also, that under highly artificial conditions of inbreeding mice a certain susceptibility to tumors may be inherited. Nevertheless, as applied to human beings and in the practical view, the foremost authorities believe that heredity in cancer may be regarded as a negligible factor.—*Jour. A. M. A.*, March 27, 1915.

THE FIGHT AGAINST CANCER.

Ten years ago, it was found that tumors could be transplanted in mice. This discovery revolutionized the study of cancer. Great expectations were aroused and it was believed it was only a a question of time until the problem of the cause and cure of malignant disease would be solved. That was a decade ago and some authorities believe that we are no nearer the facts to-day than we were then. In the case of cancer, any expectation of a single discovery solving the problem is more and more coming to be recognized as unwarranted. Cancer is not a single definite disease like appendicitis. It is rather a name which has been given to a group of entirely distinct diseases, which are different in their history, origin, mode of treatment and prospect of cure, although they are all forms of new and lawless cell growth. For this reason, we are not likely to see any sudden and sensational advance toward the knowledge of a single cause and cure of cancer. It seems now more likely that a steady reduction in the mortality from cancer will come about through the operation of many different factors. Of chief importance will be the application in many directions of a better knowledge of the conditions under which cancer arises, that is to say, a better knowledge of the immediate rather than the remote causes of the disease. Chief among these is irritation. In the removal of all sources of chronic irritation and in prompt attention to conditions which are now recognized as likely to result in cancer is to be found the only available means of actually preventing this disease. On the other hand, even with the development of cancer itself is not prevented, it is capable of complete removal from the body resulting in a cure of the patient in a far larger number of cases than at present. To bring this about and to reduce the death rate from malignant diseases is the object of the present widespread campaign of education in regard to early symptoms, and the need of prompt recognition and surgical treatment.—*Jour. A. M. A.*, May 15, 1915.

Have your society coöperate in the great national campaign now being conducted by the Commission on Cancer of the Medical Society of the State of Pennsylvania. Every county society in the country has been requested to hold a cancer symposium in June. If your June program does not admit this, hold it in July. The Publication Committee has decided to devote as much space as possible in our July number to the cancer problem.

The Pennsylvania men have been working for five years to arouse more interest among physicians in the cancer problem. Their object is, of course, to call early attention to the warning symptoms and the necessity for treatment with no delay. The statistics collected recently show that the physician has his case under observation for an average of over one year before resorting to radical treatment. Undoubtedly many lives are sacrificed in this country every year by this policy.—*Ohio State Medical Journal*, June, 1915.

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ATHENS, JULY, 1915.

HOTEL ACCOMMODATIONS FOR THE PHILADELPHIA SESSION.

The Bellevue-Stratford will be the official headquarters during the Philadelphia Session, September 20-25, 1915. The officers of the society will be located there. All scientific, social and business meetings, the Commercial Exhibit and the registration will be held in this hotel.

Below is given a list of hotels and rates per day. Members should write to the hotels direct.

	Rooms without Bath.		Rooms with Bath.	
	Single.	Double.	Single.	Double.
EUROPEAN PLAN.				
Bellevue-Stratford, Broad and Walnut Sts.	$2.50 up	$3.50	$3.50 up	$4.50 up
Hotel Adelphia, 13th and Chestnut Sts.			3.00	5.00
Ritz Carlton, Broad and Walnut Sts., S.E. Cor.			3.50 up	5.00 up
St. James, Walnut and 13th Sts.	2.00 up	3.00	2.50 up	3.50 up
Hotel Stenton, Broad and Spruce Sts.	1.50 up	2.50	2.50	4.00
Aldine Hotel, Chestnut St., above 19th	1.50 up	2.50	2.50 up	3.50
Hotel Walton, Broad and Locust Sts.	1.50 up	3.00	2.00 up	3.50
Rittenhouse Hotel, 22nd and Chestnut Sts.	1.50 up	2.50 up	2.00 up	3.00 up
Colonnade, Chestnut and 15th Sts.	1.00 up	2.00	2.00 up	3.50
New Bingham House, 11th and Market Sts.	1.50	2.50	2.50	4.00
Green's Hotel, 8th and Chestnut Sts.	1.00 up	1.50 up	2.00 up	3.00 up
Windsor Hotel, Filbert St. near 12th	1.00 up	2.00 up	2.00 up	3.00 up
New Hotel Hanover, 12th and Arch Sts.	1.00 up		1.50 up	
Dooner's Hotel, 10th St. abv. Chestnut	1.00 up		1.50 gentlemen only	
The Belgravia, Chestnut St. abv. 18th			3.00 up	
The Normandie, 36th and Chestnut Sts.	1.50 up		2.00 up	
The Continental, 9th and Chestnut Sts.	1.00 up		1.50 up	
Hotel Vendig, 13th and Filbert Sts.			2.00 up	3.00 up
Hotel Majestic, Broad St. and Girard Ave., All rooms in suites of 2, 3 and 4 rooms with parlor, average per person				1.50
AMERICAN PLAN.				
Aldine Hotel, Chestnut St. abv. 19th	3.50	7.00	4.50	8.00
Rittenhouse Hotel, 22nd and Chestnut Sts.	4.00	7.00	4.50	8.00
The Belgravia, Chestnut St. abv. 18th				5.00 up
The Normandie, 36th and Chestnut Sts.				3.00 up

THE CAMPAIGN AGAINST CANCER.

The JOURNAL presents to its readers this month a special cancer number, thereby taking part with seventy-five medical journals in what we believe to be the most far-reaching single attack that has ever been made on our unnecessary cancer mortality. The journals assisting in this movement extend from New England to California and from Florida and Texas to the Canadian border. There will be few, if any, physicians who will not be reached and stimulated by the messages in this large number of important journals.

Few will deny that the cancer question is now the most important unsolved problem before the medical profession. We all hope that the scores of earnest and devoted scientists now working in well-equipped laboratories will some day find the cause and from that a more efficient treatment. This day may be years away, if indeed it ever comes. In the meantime, our hands must not remain folded, as there are many things which we can do to cut down our present sacrifice of 75,000 Americans each year.

In tuberculosis, the laity has a distinct part to play, but it is the medical profession that must wield the effective weapons against cancer. Again, the campaign against cancer differs from that against tuberculosis in that it is comparatively without expense; no crowded tenements need to be abolished; dispensaries and elaborate sanatoria do not have to be built and maintained. Existing agencies are ample for the necessary treatment. The only thing needed is an educational campaign both for ourselves and our patients. Time and trouble is all that is required except a trifling outlay for postage, stationery and some traveling expenses.

The work in hand at the present moment is directed almost solely to the medical profession. To reduce appreciably the mortality of cancer will require constant vigilance in our daily work, constant attention to detail, and a full recognition of the importance of early signs and symptoms. The patient who goes to a physician with a commencing cancer has a right to expect of him one hundred per cent. efficiency, and it is only by rendering such service that we can merit the confidence imposed in us.

The present campaign is planned so to arouse the enthusiasm of the medical profession that every person in the United States who applies for treatment for cancer will get his or her fair chance. Good cancer literature is being supplied to the entire American profession this month. Twenty-six states[1] are attacking cancer in one way or another. Forty counties[2] in Pennsylvania devoted special meetings to cancer last month. Important meetings were also held last month by medical societies in New York, Philadelphia, Baltimore and, previously, in Boston.

We believe that the results of this campaign will be far-reaching and lasting, and it is hoped that as a result the service of the American medical profession to its public will be greatly improved, and that many lives will be saved by eliminating the fatal factor in cancer, namely, delay.

J. M. W.

THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

It is now nearly two years since the American Society for the Control of Cancer, whose purpose is well defined by its name, came into existence. Its advent should be welcomed by every member of the medical profession and especially by the Medical Society of the State of Pennsylvania, which began the work for its own people six years ago. Already the American Society has accomplished a great deal of good in giving proper instruction to the laity and stimulating a more active interest in the medical profession. Many of the state medical societies noted in a footnote to another editorial have been induced to undertake this work by the American Society. The American Society can render great assistance to any medical society already in the fight against cancer; it can do much to enlist other societies, and it can render great service in many general matters not properly coming within the scope of any one state society. Four members of our own society are on its Board of Trustees and we hope that many of our other members will join the society and become identified with the national aspects of cancer prevention work. Applications for membership should be made to the society at 289 Fourth Ave., New York City. J. M. W.

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[1] Arizona, Arkansas, Colorado, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Missouri, Montana, Nebraska, New Hampshire, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin.

[2] Allegheny, Armstrong, Bedford, Bradford, Butler, Carbon, Chester, Clearfield, Clinton, Columbia, Crawford, Dauphin, Delaware, Elk, Erie, Fayette, Greene, Indiana, Jefferson, Lackawanna, Lancaster, Lehigh, Luzerne, McKean, Mercer, Mifflin, Montgomery, Montour, Northampton, Northumberland, Philadelphia, Potter, Schuylkill, Snyder, Sullivan, Tioga, Union, Washington, Wayne and Wyoming.

STATISTICS OF CANCER IN PENNSYLVANIA.

From reports available since the establishment of the present Department of Health we get the following interesting figures:—

In 1906 the deaths from cancer were........4208
In 1907 the deaths from cancer were........4420
In 1908 the deaths from cancer were........4520
In 1909 the deaths from cancer were........4845
In 1910 the deaths from cancer were........5100
In 1911 the deaths from cancer were........5197

From this we see that, according to the best of our information, the deaths from cancer increased 23.5 per cent. in five years. This includes the natural increase due to the increase of population. The cancer death rate, however, is increasing relatively faster than the population, as shown by the fact that the rate per 100,000 living increased regularly from 60.7 in 1906 to 66.4 in 1911. We can not but believe that this relative increase is real and not apparent.

At the present rate, about 6000 people, over sixteen a day, will die from cancer in Pennsylvania this year. A large number of these deaths will be of people who originally had simple conditions which could have been relieved so that no cancer would have developed. Over half of these deaths will be unnecessary as the people have passed through periods when their disease was entirely local and could have been permanently cured.

We have over 8,000,000 people to guard against this unnecessary cancer death rate. It is a matter worthy of our united, continued and best efforts. J. M. W.

STOMACH CARCINOMA.

Dr. J. C. Bloodgood in a recent paper, *Journal of the American Medical Association*, June 19, 1915, reviews 185 cases of carcinoma of the stomach observed in the pathological laboratory of the Johns Hopkins Hospital during the past twenty-five years. He believes, after reviewing the literature, that those clinics, in which the total number of cancers of the stomach was larger than the total number of ulcers of the stomach, observed a larger percentage of cures than those clinics in which the number of ulcers of the stomach exceeded that of cancers. This was true of the cases reported. He found 132 cases of ulcer of the stomach observed in twenty-five years and 184 cases of cancer of the stomach during the same period. Of the 184 cases of cancer, 45 patients had no operation, 49 had an exploratory operation, and 41 patients had gastroenterostomy performed, making a total of 135 inoperable cases; the remaining 49, or only 26 per cent., were considered operable.

Bloodgood shows that there has been a marked increase in the number of operable cases referred to the clinic in late years. From 1890 to 1905 there were but 35 cases of cancer of the stomach examined and but 9, or 25 per cent., were operable. From 1905 to 1910 the cases increased to 76, of which only 12, or 16 per cent., were operable. In the next five years, 1910-1915, the number referred so far is 73, of which 28, or 39 per cent., were operable.

These figures demonstrate that patients with cancer of the stomach are being recognized earlier and referred for surgical treatment at a more favorable period. D. G.

ENTERTAINMENT AT PHILADELPHIA; NOTICE TO MEMBERS.

The little joy imps must be generously present in pleasing variety if the next annual session is universally to be proclaimed the best ever held.

The Committee on Entertainment is truly felicitating itself on what it has to offer. The visiting ladies have been its first consideration. However, it is believed the men will be perfectly pleased for none of the serious side of shop will appear in the entertainment arrangements, which will cater to a great diversity of fancies. The committee is determined that the spirit of most generous welcome must be thoroughly recognized by every person complimenting the society by his or her presence. To this end, dear doctor, member of a Pennsylvania county medical society, you are solicitously invited to come and bring your wife or daughter, feeling assured that what can be done, will be done to make and keep you very happy, entertained and amused. The good to see, hear and eat will be bountifully prevalent. The scientific part of the session is not within the field of the Entertainment Committee.

Those having that in charge are capable and will prove it. This early notice is published that each member will arrange no vacation not including this session of the state society.

As soon as you know that you are coming a word, so stating and giving the number of your party, written to the chairman of this committee will make the work easier and better and will prove mutually advantageous, for the approximate number must be known as early as possible to facilitate arrangements.

While the committee holds its program for the week open to sufficiently attractive additions, plans have been made for the following items.

The Smoker Committee has arranged to make this the greatest smoker ever given by the society, in pursuance of which we have taken the large and commodious quarters of the Scottish Rites Hall, for Tuesday evening, where it will be possible to seat at least one thousand persons. A first-class caterer with sufficient waiters and all necessary details will serve the supper at small tables, which obviates the possibility of overcrowding or interfering with entertainment. The large stage enables a continuous entertainment to be carried on. Up to the present time arrangements have been made with some of the best talent procurable, and it is hoped that on the night of the smoker there will be added several well-known stars who will be appearing in Philadelphia that week. Informal dress. This is to be surely some show.

For Wednesday there has been arranged a day at Wanamaker's store, the morning to be devoted to shopping; at 2 P.M., in the Greek Hall, a lecture on a medico-popular subject; at 3 P.M., a tour of the store; at 4 P.M., an entertainment in the Egyptian Hall; at 4:50 P.M., an organ recital, and such other things as have made Mr. Wanamaker known as the prince of hosts. Another entertainment will be that the ladies will be taken to Valley Forge and given an excursion through the park in automobiles from Philadelphia. A feature of the day will be a stop at one of Philadelphia's large suburban homes where refreshments will be served as a part of the entertainment.

A trip down the Delaware, Thursday, has been arranged for the members' wives and daughters, starting at 9 A.M., going to Sandy Hook, where luncheon will be served. Some wives of Philadelphia physicians will go along as hostesses. On the return a stop will be made at the United States Navy Yard, League Island. For those who do not wish to take the boat trip, there have been procured tickets giving admission to one of the high-class moving-picture houses.

The Atlantic City Medical Society appointed a committee, of which Dr. William Edgar Darnall is chairman, to confer with the Committee on Entertainment regarding a seashore entertainment for the members of the society resident outside of Philadelphia County and the wife or daughter of each. A full day's complimentary stay, beginning Saturday afternoon, September 26, at the largest first-class beach-front hotels, for about five hundred was arranged. This most generous courtesy is extended by the managements of the hotels. Fuller details will be given later.

Of course the real big social affair will be the president's reception at the Bellevue-Stratford on Wednesday evening.

It is hoped your impression will be that nothing has been left undone toward making the event a brilliant success.

Communications on the subject of entertainment should be addressed to Dr. William Duffield Robinson, Chairman, 2012 Mount Vernon Street, Philadelphia.

SHALL WE BE OUTDONE BY TEXAS?

In that little state of Texas, at the meeting of the State Medical Association in Fort Worth last May, 1008 physicians out of a membership of 3368 were registered, and not a few had to travel more than six hundred miles to reach the meeting place.

With the same percentage of attendance, we should have two thousand members registered at Philadelphia next September, notwithstanding the fact that there were but 1565 registered there two years ago. The committees have nearly completed arrangements which, they say, will make the Philadelphia Session better in every way than any preceding session. Philadelphia is an ideal assembly place and all the meetings, including registration and exhibits, will be in the Bellevue-Stratford.

Plan to spend the whole week in and around Philadelphia, taking in the clinics, the scientific meetings with a very varied program by the best of men from this and other states, shopping and sight-seeing. You may wear a dress suit in the evening, or do as many of the Philadelphia members will do, appear in the same suits they wear at the day meetings. At the theaters you may occupy a box or sit in the gallery and you will find friends and strangers in either place. You can secure rooms, with or without bath, at headquarters (if you do it soon) or you can find comfortable places in nearby hotels to suit your tastes and your pocketbook; there are good clean respectable hotels with rooms for a dollar a day. Begin now to make your plans to be in Philadelphia on the opening day, Monday, September 20, 1915. You may spend the time just as you please—attending scientific meetings and clinics all the time, some of the time, or not at all. One prominent, sober, hard-working country practitioner spent four days at one of our sessions a few years ago but did not hear a single paper; he had a good time nevertheless. Others stick closely to work. Come and have what you call a good time. S.

POPULAR EVENING LECTURE AT PHILADELPHIA.

The Committee on Health and Public Instruction of the state society is charged with the duty, subject to the House of Delegates, "to attempt to bring together the lay people and the profession, to increase confidence in scientifically trained physicians, and to unite the public and the medical profession in a campaign for better health conditions." Such efforts are in the interest of both physicians and the public, and more and more is the need realized by unselfish and thinking people.

Dr. H. B. Favill, Chicago, chairman of the Council on Health and Public Instruction of the A. M. A., has promised the Committee on Scientific Work to deliver a popular lecture to which the public will be invited on Thursday evening. Dr. Favill is an especially pleasing and capable lecturer and those who have heard him will be glad to know that our members and the laity of Philadelphia are to have this treat. It is hoped that the members in and near the city will make special effort to attend and invite their friends to hear Dr. Favill. S.

NEW APPLICATION BLANKS FOR MEDICAL DEFENSE.

A new blank has been distributed to the county secretaries to be used by those sued or threatened with suit for alleged malpractice. It was attempted to make the blank so plain that few errors would likely occur in filling out the blank, but the first application made on a new blank was signed by the president and the secretary of the county society in "Blank D" in the places intended for the president and the secretary of the state society. It is hopd that this note may make more clear the purpose of "Blank D" and also emphasize the importance of care in filling out these application blanks. Many of the applications for assistance from the Medical Defense Fund have to be returned for completion, necessitating delay, and sometimes prejudicing the committee against the applicant. One is sometimes inclined to feel that if the applicant took no more care in the treatment of his patient than he did in making out his application blank it is not to be wondered at that he is sued or threatened with suit. In each case there will likely be some part of the blank that can not be filled in, and it must be remembered that the blank was not prepared for just that one case. The blank is, however, drafted in the interest of the member sued or threatened with suit and the more carefully it is filled out the better it will be for the defendant physician. If he is not already in possession of all the data that he should be expected to have in order properly to fill out the blank, then the sooner he "looks up his case" the better it will be for him. It is better, however, to say too little rather than too much. S.

DR. WALTER H. BROWN.

Dr. Walter H. Brown, a member of the Bucks County Medical Society, who has recently completed a course in State Medicine at Harvard University, and who is now engaged in work for the Massachusetts State Department of Health, writes this office a letter, a paragraph of which is given below. His address is 1137 Massachusetts Ave., Cambridge, Mass.

> "There seems little probability of my returning to Pennsylvania in the near future. It would therefore seem wise for me to resign as a member of the Committee on Society Comity and Policy. It

is with real regret that I sever my official relations with the Medical Society of the State of Pennsylvania. From its sessions and from its individual members I have drawn the inspiration to leave my country practice to tackle some of the larger problems of state medicine. That the growth and welfare of the organization will ever remain a matter of live concern to me goes without saying. If at any time I can be of service, I am at your disposal."

S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the June Journal was printed.

Allegheny County: *New Members* Robert Ayres, Fair Haven; Thomas S. Anderson, Andrew M. Barr, George N. Camp, Nelson P. Davis, Ogden M. Edwards, Morris J. Gelb, Edward E. Hamer, Charles A. Hauch, Raleigh R. Huggins, August H. Jahn, William J. Lange, Samuel C. McCorkle, Eugene G. Matson, Arthur Miltenberger, Grant J. A. New, John R. Owens, Charles Rowan, James P. Shaw, Grover C. Weil, James H. Wright, William Henry Wymard, Pittsburgh; Thomas B. Allison, Tarentum; George L. Beswick, Wilmerding; Charles F. Boucek, Martin N. Greer, Allegheny; Robert W. Dickson, Sewickley; William E. Hodgson, Glassport; Arthur W. Hopper, Bridgeville; Enoch L. Jones, Charles C. Rinard, Homestead; Thomas E. McMurray, Thomas M. Sankey, Wilkinsburg; N. F. Phillips, Mt. Lebanon; Fred L. Patterson, Imperial; John Porter, McKeesport; I. Bebout Reed, Crafton; Louis G. Rubenstein, Braddock; Frederick W. Silsby, Creighton; Lawrence D. Smith, Pitcairn; Louis N. Smith, Swissvale; Albert R. Trevaskis, East Pittsburgh. *Transfer*—Charles E. McCune to Erie County Society; Robert C. Rasin to York County Society.

Armstrong County: *New Member*—Gilpin M. McCain, New York City.

Beaver County: *New Members*—John H. Boal, Baden; Caroline M. Baldwin, Rochester; John M. Jackson, Beaver Falls; Harry C. Lacy, Leroy B. Miller, New Brighton.

Bedford County: *New Member*—M. B. Brenneman, Saxton.

Blair County: *New Member*—George F. Dandois, Martinsburg. *Death*—Mary Elizabeth Nowell (Woman's Med. Coll. of Pa., '84) in Altoona, June 25, from pneumonia, aged 72.

Bradford County: *Removal*—Frank L. Pratt from Wellsburg, N. Y., to Gillett.

Bucks County: *New Member*—William G. Moyer, Quakertown. *Death*—Joseph B. Heritage (Hahnemann Med. Coll. and Hosp., Philadelphia, '91) in Langhorne, June 30, aged 46.

Cambria County: *New Members*—William D. Haight, Louis H. Mayer, Jr., Johnstown; Francis M. Schilling, Johnstown (by transfer from Philadelphia County).

Chester County: *New Member*—Francis B. Jacobs, West Whiteland.

Clarion County: *New Member*—Robert J. Greer, East Brady.

Clinton County: *New Member*—Irving O. Mahr, Loganton, (by transfer from Mifflin County).

Crawford County: *Transfer*—Homer Dale Baird to York County Society.

Delaware County: *New Member*—Perry Covington Pike, Media.

Erie County: *New Member*—Charles E. McCune, East Springfield (by transfer from Allegheny County).

Fayette County: *New Member*—Stephen E. Peters, Masontown. *Removals*—Clyde W. Conn from Springfield to Uniontown, R.D. 3; Benjamin F. Harris from Connellsville to 1005 Penn Ave., Kansas City, Mo.; Charles E. Wooding from Merrittstown to Winston-Salem, Forsyth Co., N. C.

Lackawanna County: *New Members*—Frank C. Garvey, Scranton; John B. Grover, Peckville; Murvington E. Malaun, Carbondale. *Death*—James Francis Jacob (Jefferson Med. Coll., '93) of Throop, in Scranton, May 24, two days after an operation for gallstones, aged 44. *Removals*—John W. Grant from Carbondale to Forest City (Susquehanna Co.); Alan L. Diefenderfer from Carbondale to Slatington (Lehigh Co.).

Lehigh County: *New Member*—Thomas L. Smyth, Allentown.

Luzerne County: *New Members*—Thompson M. Baird, Kingston (by transfer from the Isle of Wight County Medical Society of Virginia); W. J. Doyle, Luzerne; John Hislop, Miners Mills; Philip F. Hubler, West Pittston; Samuel A. Ruffner, Kingston. *Death*—Benedict Jones Wetherby (Rush Med. Coll., Chicago, '84) in Wilkes-Barre, May 29, aged 55.

Lycoming County: *New Members*—George C. Troutman, Williamsport; James W. VanHorn, Montoursville.

McKean County: *New Member*—Charles F. Elliott, Mt. Jewett. *Death*—William J. Armstrong (Bellevue Hosp. Med. Coll., New York, '83) aged 62.

Mifflin County: *Transfer*—Irving O. Mahr to Clinton County Society.

Philadelphia County: *New Members*—Pasquale Assante, John P. Bethel, H. Winfield Boehringer, L. Napoleon Boston, Thomas J. Byrne, Anne R. L. Caffrey, John M. Cruice, Dwight Bailey Fuller, T. Chalmers Fulton, Samuel A. Ginsburg, Nathan H. Hornstine, Joseph D. Lehman, John Leedom, Leon F. Luburg, Alexander W. McCoy, Max Messing, Tamlin Lincoln Powell, Edwin T. Robinson, George G. Strickland, Mervyn Ross Taylor, William H. Wells, Harry W. Weyant, William Reynolds Wilson, Philadelphia; Thomas J. Buchanan, Toms River, N. J.; Thomas B. L. Jordan, Cape Charles, Va. *Transfer*—Francis M. Schilling to Cambria County Society. *Deaths*—T. Hewson Bradford (Jefferson Med. Coll., '74) in Philadelphia, June 24, aged 67; Robert N. Ramsay (Univ. of Pennsylvania, '79) in Philadelphia, June 18, from heart disease, aged 58.

Potter County: *Death*—Charles Meine (Univ. of Buffalo, Med. Dept., '70) in Galeton, June 12, aged 85.

Somerset County: *New Members*—John W. Haws, Windber; Albert M. Lichty, Elk Lick; Fred B. Shaffer, Somerset.

Venango County: *New Member*—Paul McLain, Oil City.

Washington County: *New Members*—Samuel N. Dague, Midland (Beaver Co.); Frank L. Knox, Claysville.

Westmoreland County: *New Members*—William J. Latimore, Herminie; D. Richie Shepler, West Newton.

York County: *New Members*—Homer Dale Baird, York (by transfer from Crawford County); Lewis H. Sterner, Porters Siding; Robert C. Rasin, York (by transfer from Allegheny County). S.

AMERICAN MEDICAL ASSOCIATION.

WORK IN THE SCIENTIFIC SECTIONS.

The sixty-sixth annual session of the American Medical Association, held at San Francisco, California, has come to an end. The attendance, compared with eastern meetings, was not large. The second day was called Health Conservation Day and was devoted entirely to lectures on public health questions; therefore, no section work was done, and as a consequence the work of the various sections was limited to three meetings.

Two hundred and thirty-six papers were scheduled to be read before the thirteen sections. As many of the proposed contributors were prevented from attending by illness and distance, and no papers were read in the absence of the authors, two hundred or less papers were presented.

Notwithstanding the incentive to distraction of a great exposition the scientific interest was maintained throughout, and the unanimous expression of the chairmen with whom the writer was able to communicate was that the papers were of unusual scientific interest and the attendance and the devotion of the members to the discussions were worthy of the papers. The fewer number of papers and the consequent want of hurry in expediting the program favored discussion, which was generally indulged in. "The papers and discussions would have done credit to the American Neurologic Association," announced the chairman of the Section on Nervous and Mental Diseases. "A very unusual interest in discussion," asserted the chairman of the Section on Medicine. Neither the chairman nor the secretary of the Section on Obstetrics, Gynecology and Abdominal Surgery, owing to illness, could be present, but the excellent program they had prepared was well received and thoroughly considered. Especially worthy of mention were the following papers: "Placental Bacteremia" by Dr. J. Morris Slemons of San Francisco in which he demonstrated the not infrequent occurrence of infective processes causing illness and often death in the new-born child by transmission of pathogenic bacteria through the placenta from the non-aseptic vaginal palpations during the progress of labor; "Nitrous Oxid Analgesia in Obstetrics" by Dr. Carl H. Davis of Chicago, and "The Application of Morphin-Scopolamin Amnesia in Obstetrics" by Dr. J. O. Polak of Brooklyn. Dr. Polak opposed the extreme use of the drugs as detrimental to both mother and child, and was inclined to make their use a first-stage method of relief rather than in the later stages. He would prefer the gas in the second stage. The consensus of opinion in discussion was against profound narcosis of patients unless they could be under continued and competent scientific observation. The gas was advocated because, in case the patient was not doing well, it could be interrupted; but in the hypodermatic employment of drugs, if the patient showed danger symptoms, the dose was beyond recall.

"Tuberculosis of the Uterine Appendages" by Dr. Howard Canning Taylor of New York, and "Application of Various Theories in the Practical Management of Peritonitis" by Dr. W. D Haggard of Nashville, Tenn., dwelt upon the manipulation of these conditions within the pelvis and peritoneum. The former urged the importance of microscopic investigations of all structures removed, in order to insure not only a correct recognition of the causes but more effective subsequent cure of the affected individual. The second paper dwelt more with the peritonitis following appendicitis, especially emphasizing the value of starvation, lavage, continuous instillation of salt solution and profound narcotization to insure absolute rest in all cases where the condition has passed the third day and extensive peritonitis has developed.

"Prognosis of Sterility" was ably presented by Dr. Edward Reynolds of Boston, who urged the recognition that not unfrequently the male is at fault: hence, the subjection of the woman to surgical measures before his condition is determined, is a serious crime. The chemical reaction of the secretions of the man and woman upon each other must be determined and this can be accomplished only by investigation of the secretion at varying times subsequent to coition by withdrawing the secretion from the vagina, cervix and fundus of the uterus, respectively, and ascertaining the persistence of activity in the spermatozoids. Dr. De Lee, in discussion, mentioned investigation of the influence of the serum of the woman upon the spermatozoids and the possibility of their being dissolved by it.

Of especial interest were the papers of Henry Schmitz of Chicago and Dr. Curtis F. Burnam of Baltimore, Md., on "The Employment of Radium in the Treatment of Cancer." The former displayed by lantern slides the changes which the cancer cells undergo after subjection to radium treatment, the increased connective tissue formation and cicatrization in which the cancer cells are swollen, broken up and finally compressed until they disappear.

Other papers awakening especial interest were "Subinfection from Foci in the Pelvis and Abdomen" by Dr. Horace G. Wetherill of Denver, Colo.; "Cholecystectomy and Cholecystic Toxemia" by Dr. W. Wayne Babcock, Philadelphia; "The Pylorus; Observations Noted in Association with Gastrointestinal Lesions" by Dr. P. E. Truesdale of Fall River, Mass.; and "The Significance of the Fixation of Certain Abdominal Organs in the Human Body" by Dr. R. C. Coffey of Portland, Ore.

The Section on Dermatology in the presentation of some twenty lepers afforded an opportunity for the study of the physical characteristics of that disease which is not given in any other portion of this country.

Altogether the scientific standard of efficiency has not been depreciated by this San Francisco Session. E. E. Montgomery.

SOCIAL ENTERTAINMENT.

Meeting as we did under the shadow of one of the greatest entertainment features ever presented to the American people, the Panama Pacific Exposition, the functions peculiar to the annual meeting of the American Medical Association were not neglected. With the characteristic cordiality of the Westerner the people of the Pacific Coast made us feel at home.

On Tuesday afternoon the ladies of SanFrancisco entertained the visiting ladies at one of the beautiful buildings upon the exposition grounds.

The usual function in honor of the incoming president was held in the magnificent California building; at this time a medal, awarded to the medical profession for its part in making possible the completion of the canal and the holding of the exposition, was presented by the exposition officials, in a fitting address, to the president, Prof. William L. Rodman of Philadelphia. As we moved through the beautiful corridors of the building, the feeling came to us, as it did every day that we were upon the grounds, that all this is but for a season! It seems a pity that such wealth of beauty and symmetry, such a profusion of decoration magnificently proportioned, should have been created at such great expense for so brief a time. But our meeting lasted only for a week!

Most interesting entertainments were held on Friday after the scientific programs were completed. A large company was taken by boat around SanFrancisco Bay, out to the Golden Gate, stopping at the Presidio to inspect the United States Government camp at this point. Another company was taken across the bay to Oakland where they were met by the physicians of Alameda County and driven in automobiles through the beautiful parks and suburbs of Oakland and Berkeley, and the grounds of the University of California with its unique Greek theater, and given a luncheon at one of the suburban resorts. Still another smaller company was taken by the Santa Clara County physicians to San Jose and then driven in automobiles through the beautiful gardens and farms of the Santa Clara Valley.

Altogether, those present pronounced it a most profitable and enjoyable meeting. L. M. Gates.

BUSINESS TRANSACTED AT SAN FRANCISCO.

(Abstracted from *Journal A. M. A.*)

Only five of the nine Pennsylvania members who had promised to serve in the House of Delegates were present. These were Drs. John B. Carrell, L. M. Gates, H. B. Gibby, E. E. Montgomery and Jefferson H. Wilson. Dr. Montgomery was appointed chairman of the Reference Committee on Sections and Section Work.

The fellowship on May 1, 1915, was 42,366, a net increase of 1337. There are in Pennsylvania 1425 subscribers to the *Journal of the A. M. A.* who are not fellows. The total membership on May 1, 1915, was 76,020, a gain of 1785. The Reapportionment of members of the House of Delegates gives Pennsylvania nine members as before; in fact, there is a change in only two states, California gaining one member and Ohio losing one.

The following extracts are taken from the report of the Board of Trustees:—

As will be remembered, last year we called attention to the fact that on account of the extension of the various activities of the association the profits had practically reached the vanishing point. This year it will be noticed that the profits are slightly better, but only $3984.59. A reference to the association expenses, under Exhibit B, will show that these expenses—that is, such expenses as those of the propaganda work, the chemical laboratory, medical education, therapeutic research, organization, health and public instruction, distinguished from those connected with the publication of *The Journal*—amount to $82,286.15, the major portion of which must be regarded as being expended for purely altruistic work.

As will be noticed under Exhibit A, a reserve fund has been created, which now amounts to $118,832.50. The board has adopted a resolution to the effect that this reserve fund is not to be drawn on except by an affirmative vote of seven members of the Board of Trustees, and that the fund shall be added to yearly.

The following supplementary report of the Trustees was adopted and the Board of Trustees was authorized to take such action as the board thinks proper:—

Whereas, The antinarcotic law known as the Harrison Narcotic Law, approved December 17, 1914, is one of the most important public health measures that has been enacted in recent years, and

Whereas, The Council on Pharmacy and Chemistry has called attention to the fact that this law is seriously weakened because Section 6 permits the indiscriminate sale and use of narcotics when they are contained in proprietary and stock preparations, and

Whereas, This exemption discriminates in favor of the proprietary medicine interests and against the public interest, is contrary to the aims and objects of the law, and is a detriment to the public health and welfare,

Therefore, The Board of Trustees earnestly recommends that the House of Delegates take action at this time to induce the Congress of the United States to amend the said Act by repeal of Section 6, so that the indiscriminate sale of proprietary and other ready made preparations containing narcotics shall not be permitted.

The House adopted the following resolution offered by the Reference Committee on Reports of Officers:—

Believing further that advertising in medical journals is the basis for the successful promotion of the trade in certain proprietary medicines, we earnestly advise all members of the medical profession to withhold their support from those journals which advertise proprietary remedies that have not been investigated by and accepted by the Council on Pharmacy and Chemistry.

Detroit was selected as the place for next session, and the following officers were elected:

President—Rupert Blue, Washington, D. C.

First Vice President—Albert Vander Veer, Albany, N. Y.

Second Vice President—George B. Evans, Dayton, Ohio.

Third Vice President—Donald Campbell, Butte, Mont.

Fourth Vice President—Herbert C. Moffitt, San Francisco.

Secretary—Alexander R. Craig, Chicago.

Treasurer—William Allen Pusey, Chicago.

Trustees—M. L. Harris, Chicago; William T. Councilman, Boston, and Thomas McDavitt, St. Paul.

PENNSYLVANIA MEMBERS REGISTERED AT SAN FRANCISCO.

Altoona—R. T. Eldon.
Arnot—D. T. Ditchburn.
Ashley—T. A. James.
Beaver—J. H. Wilson.
Beaver Falls—T. P. Simpson.
Belleville—Elizabeth W. Allison.
Braddock—J. C. Nicholls.
Bradford—T. O. Glenn.
Cambridge Springs—G. E. Humphrey.
Clearfield—G. B. Shivery.
Dubois—S. M. Davenport.
Emaus—M. J. Backenstoe.
Greensburg—E. M. Clifford.
Harrisburg—F. W. Coover, C. S. Rebuck, B. F. Royer.
Hatboro—J. B. Carrell.
Johnsonburg—W. R. Palmer.
Kane—E. O. Kane.
Latrobe—B. F. Ober.
Ludlow—R. L. Young.
Marietta—S. H. Gilliland.
McKeesport—A. T. Zeller.
McKees Rocks—C. L. McKinnon.
New Castle—J. R. Cooper.
New Kensington—Alice L. Hall.
Norristown—Flora P. Easton.
Philadelphia—W. W. Babcock, T. C. Davis, F. X. Dercum, C. J. Hatfield, J. A. Jackson, H. R. Loux, Thomas McCrae, Alice V. Mackenzie, G. W. Mackenzie, E. E. Montgomery, W. L. Rodman, J. T. Rugh, J. M. Spellissy, F. R. Starkey, F. E. Stewart, Warren Stirling, I. P. Strittmatter, M. C. Thrush, W. H. Walsh, Margaret A. Warlow, Samuel Wolfe.
Pittsburgh—A. R. Cratty, Bertha E. Dornbush, O. C. Gaub, J. P. Griffith, G. C. Kneedler, W. S. Langfitt, J. A. Lichty, Caroline S. Marshall, L. L. Schwartz, E. B. Woods.
Pottsville—L. T. Kennedy.
Red Lion—J. C. Atkins.
Scranton—L. M. Gates.
Sharon—G. W. Kennedy.
South Bethlehem—W. L. Estes.
State College—W. S. Glenn.
Upper Lehigh—H. M. Neale.
Wernersville—G. G. Wenrich.
West Chester—W. T. Sharpless.
Wilkes-Barre—H. B. Gibby, J. B. Tobias, S. M. Wolfe, Sarah D. Wyckoff.
York—R. E. Butz.

STATE NEWS ITEMS.

BORN.

To **Dr. and Mrs. T. Ben Johnson, Jr.**, Towanda, July 8, a daughter, Frances Kingsley.

MARRIED.

Dr. J. Depew Mingos, Towanda, and Miss Ethel Boggs, Waynesboro, June 23.

Dr. Mulford K. Fisher and Miss Julia Goldberger, both of Philadelphia, June 23.

Dr. Forrest G. Schaeffer, Allentown, and Mrs. Grace Wright Mills, New York, June 21.

Dr. Charles W. Jennings and Miss Katharine Shuman, both of Pittsburgh, June 16.

Dr. Moses Haven Baker, Pittsburgh, and Miss Nita M. Cashman, New Oxford, June 24.

Dr. Hunter W. Scarlett and Miss Edith Ridway Townsend, Philadelphia, in Paris, July 8.

Dr. Carl Lawrence Lutz, Avalon, and Miss Kathryn Esther McNeal, Pittsburgh, June 24.

Dr. George D. Fussell, Philadelphia, and Miss Elizabeth D. Hutchinson, Hempstead, L. I., recently.

DIED.

Dr. Menotti Mazza, Philadelphia, July 4, from sarcoma, aged 46.

Dr. Hanna J. Price (Woman's Med. Coll. of Philadelphia, '81) in Harrisburg, July 5.

Dr. John R. Foder, Reading, was drowned in the Schuylkill River, June 15, aged 25.

Dr. William A. T. Keeler (Jefferson Med. Coll., '73) in Stroudsburg, May 24, aged 81.

Dr. John M. Scott (license, Pa., '81) in Cabot, May 20, from cerebral hemorrhage, aged 65.

Dr. John E. McCuaig, (Queen's Univ., Kingston, Ont., '91) in Erie, May 18, from uremia, aged 47.

Dr. Joseph M. Shook, Bangor, June 16, from injuries received in an automobile accident, a few days before.

Dr. Samuel Weiss (Bellevue Hosp. Med. Coll., New York, '71) in Lebanon, June 18, from chronic Bright's disease, aged 70.

Dr. William Henry Stettler (Bellevue Hospital Med. Coll., '91) of Spinnerstown, in Philadelphia, June 8, from strangulated hernia, aged 45.

Dr. Eliza J. Zimmerman Burnside (Woman's Medical College of Pennsylvania, Philadelphia, '60) of Philadelphia, in Tiffon, Ohio, May 28, aged 83.

Dr. John Frayne was found dead in a bathroom of the Scranton State Hospital, where he was an intern. Acute indigestion was the cause of his death. He was 27 years old.

ITEMS.

Dr. Samuel McClary, III., has been elected assistant professor of surgery in the Medico-Chirurgical College.

Dr. James K. Young has resigned the clinical professorship of orthopedic surgery at the Woman's Medical College.

Dr. S. Lewis Ziegler, Philadelphia, received the degree of Doctor of Laws from Lafayette College at its commencement, June 16.

Governor Martin G. Brumbaugh delivered the address to the graduating class of the Training School for Nurses, Nason Hospital, Roaring Spring, Friday, July 2.

Jefferson Medical College will receive $100,000, for the endowment fund, by the will of the late Josephine Lewis, subject to the raising of an equal amount by its alumni.

Dr. William H. E. Wehner, Philadelphia, has been appointed medical director of the Fidelity Mutual Life Insurance Company in place of Dr. William H. King, resigned.

The University of Pennsylvania receives, by will of the late Samuel Dickson, $50,000, the income to be used for the maintenance of the William Pepper Clinical Laboratory of Medicine.

The Harrisburg Hospital has received $6000 from Mrs. Lyman D. Gilbert, the income of which is to be devoted to the maintenance of a free bed to be known as the Henry and Harriet Gilbert Memorial.

Drs. Robert G. Leconte and John H. Gibbon, Philadelphia, were elected president and secretary, respectively, of the American Surgical Association at its annual meeting in Rochester, Minn., June 9-11. The 1916 meeting will be in Washington in May.

President William S. Erdman of the Bucks County Medical Society and Mrs. Erdman gave a reception to the doctors and their wives at their beautiful home at Buckingham, in June. One hundred and two guests enjoyed the occasion and broke bread together.

Memorial Laboratory. The children of William H. Singer, Pittsburgh, will erect a laboratory for investigations into the origin of diseases, which will be operated in connection with the Allegheny General Hospital. The construction, equipment and endowment will total $400,000.

Fake Diagnosis by Mail. Drs. S. Decker Treible and E. R. Smiley, and Mr. George M. Franke, plead guilty, June 19, in the United States District Court at Philadelphia, to a charge of using the mails to defraud in connection with a medical bureau. Dr. Treible was fined $2500 and the others $1000 each.

The Philadelphia County Medical Society at its business meeting, June 16, took the following action: It was moved and adopted that the arbitrary abridgment of the membership list of this society by the PENNSYLVANIA MEDICAL JOURNAL should be brought to the attention of the delegates of this society and reported to the house of delegates of the Medical Society of the State of Pennsylvania.

Dr. Edward W. Ryan, Scranton, chief of the American Red Cross in Belgrade, has been decorated by both the Servian and French Governments for his work in the hospitals where typhus fever has been raging. France has made him chevalier of the Legion of Honor, the official order of the French Republic. Crown Prince Alexander himself bestowed on Dr. Ryan the Servian decoration of the order of St. Sava. At the same time the Crown Prince expressed his appreciation of "this worthy and noble representative of the great western republic." Dr. Ryan is recovering from typhus, which he contracted while caring for the Servian patients.

Postgraduate Teaching Association Organized. The Coöperative Association for Postgraduate Teaching of Medicine in Philadelphia has recently been organized by more than 100 practitioners of Philadelphia with Dr. David Riesman as chairman and Dr. George P. Müller as temporary secretary. The objects of the association are stated to be to investigate and ascertain the resources for postgraduate teaching that exist in Philadelphia; so to arrange the courses offered by each hospital and college as to enable the students to spend each day in solid study or laboratory work, and the establishment of a central office in charge of the permanent secretary, where rosters of courses may be made and where all information will be listed.

Pennsylvania First in Medical Standards. Dr. Arthur D. Bevan, Chicago, chairman of the Council on Medical Education of the A. M. A., in his report at San Francisco, said: "With the exception of the hospital intern year, the ideal of 1905 has become a reality." Dr. J. M. Baldy, president of the Bureau of Medical Education and Licensure, is quoted in the *Philadelphia Ledger* as follows: "The applicants at the State Medical Examination held in June, this year, had fulfilled all the requirements advocated without exception, and all applicants in the future will be required to do the same. Pennsylvania is the only state in the Union which has required the intern year. The New Jersey Legislature has just passed a similar requirement which will become operative in 1916."

Dr. William L. Rodman, president of the American Medical Association, sent the following telegram, June 26, from San Francisco, to Dr. Dixon: "The Grand Old Keystone State is to be congratulated for the splendid prize winning exhibit of Pennsylvania State Department of Health. Every detail in the arrangement of this exhibit speaks for modern sanitation. The tuberculosis symposium is a revelation to the public; is highly educational in value, and is constantly being studied by students of the Great White Plague. Your typhoid epidemic features show how far well coördinated medical and engineering efforts may be utilized in promoting public health. Your school hygiene display is one of the popular attractions of the exposition. I congratulate you personally. You have again made Pennsylvania your debtor. By all means give us the great educational lesson in Philadelphia for a full month after the Exposition closes. Every large center of population in Pennsylvania could profitably have a similar opportunity to study these useful lessons."

GENERAL NEWS ITEMS.

The Council on Pharmacy and Chemistry. During June the following articles have been accepted for inclusion with New and Nonofficial Remedies: Special caustic applicators fifty per cent., Antiseptic Supply Company; enzymol, Fairchild Brothers and Foster; syrup cephaeline, Lilly, Eli Lilly and Company.

Dr. Seraph Frissell, a graduate of Mt. Holyoke in 1869 and of University of Michigan in 1875, died in Dalton, Mass., June 20, aged nearly 75. She was the first woman to be admitted to the Berkshire Medical Society and was an honorary member of that society for seven years before women were admitted to membership.

The State Medical Association of Texas held its forty-ninth annual session at Fort Worth, May

4-6. A new constitution was adopted. Members whose dues are not paid by March 1st stand delinquent as from January 1st. Dues fixed at three dollars, one for *Journal*, one for medical defense and one for general fund. Harrison Anti-Narcotic Law commended. Members were urged to write advertisers saying, "Saw your advertisement in the *Texas State Journal of Medicine*."

Prohibition of Boric Acid as a Food Preservative. Report from Washington, D. C., states that on June 21 the United States Supreme Court upheld the constitutionality of the Illinois Pure Food Law which prohibits the sale of a food preservative containing boric acid. Justice Hughes in his decision, stated that the validity of the law must be upheld unless it were shown beyond doubt that boric acid as a food preservative is not unwholesome. This, the court held, had not been done.

The Florida Legislature has passed an act providing medical school inspection and subsequent medical treatment. The act was signed by the governor and became a law June 4. This law was drawn up by Dr. Oliver J. Miller, health officer of Sanford, and its passage was due in great measure to his efforts. The bill provides for a thorough examination of all school children of the state, including rural schools, under the direction of the State Board of Health. An inspector is appointed for each county and no physician is to have more than 2500 children under his care. The bill also provides for a sanitary survey of all school buildings and their environments.

The Ohio State Medical Association at its seventieth annual session in Cincinnati, May 6 to 9, fixed the annual per capita assessment at $3.00. The increase was to prevent any retrenchment of its Journal and in expectation that a medical defense plan will be adopted next year. The Ohio Society for the Study of Alcohol and Other Narcotics was organized on the last day. Dr. J. H. J. Upham, the president of the state medical association, stated his views as follows: "We should not become a political organization affiliated with the drys, but should work strictly as a medical society. The hope of temperance is not in the dry political movement. The true hope of temperance lies in awakening the big firms to a realization of the economic conditions and the economic waste resulting from alcohol. Doctors have often been quoted as favoring the use of alcohol. We must correct the impression."

That Both Whisky and Brandy Are to Be Deleted from the next edition of the Pharmacopeia is the news that recently came to us. As mentioned in the *Circular* for January, page 55, the subject has been discussed by the committee of revision for some time, and since there failed to be an agreement as to the character of the monographs on these two alcoholic preparations, the result was the passage of a motion deleting them from the ninth edition of our national standard. To us, the step seems a wise one, since very little whisky and brandy is prescribed by physicians, unless a community goes dry, and when that occurs, the less the doctor prescribes alcoholics the better it is for his reputation. And then it can no longer be said by violators of sumptuary liquor laws, that the medicinal value of whisky and brandy is proven by the recognition of these substances by the Pharmacopeia.—The *Druggist's Circular* for July.

The Medical Library Association, consisting of a membership of fifty-two libraries and forty-six individuals, has completed eighteen years of its existence and proved the worth of its object,—to foster medical libraries and the maintenance of a system for the exchange of medical literature among them. In other words, it has formed a clearing house through which books, journals and reprints, or lists of them, may be sent from one library to another. Lists of material for exchange are sent monthly to members of the Association, this method having been found more useful than the system of quarterly bulletins issued formerly. By careful use of funds the treasurer's report for the past year showed a substantial balance with which it is planned to extend still further the work of the Association. Lieut.-Col. C. C. McCulloch, Jr., of the library of the surgeon-general's office, is president of the Association and Dr. John Ruhrah of Baltimore is secretary and treasurer.

The Medical Society of the State of New York at its annual meeting in May appointed "a committee of three to prepare a more exact and clear definition of what shall constitute eligibility to membership for the instruction and guidance of the county societies, and to outline some feasible plan for more rapidly increasing our membership." This was in response to a recommendation of President Wende, who said, "It is frequently disheartening to come across so much lack of enthusiasm on the part of the officers and members of the county societies. No doubt this indifference is due to the fact that the average physician is too busy. Only frequent contact with his fellow practitioners will tend to correct this; and it is only personal contact and the promulgation of the advantages one enjoys from his membership that will ever successfully secure the eligible nonmember. I would suggest that some uniform plan be adopted whereby each member shall be constantly constrained to influence the nonmembers of his community to affiliate with the county society." The membership of the society January 1, 1915, was 7621. The expense of alleged malpractice cases for 1914 was $6,522.50.

Ordinance for the Employment of Municipal Visiting Tuberculosis Nurses. An ordinance drawn up by Dr. George E. Malsbary was approved by the voters of Los Angeles at the city election, June 1, by a vote of 49,359 to 25,681. The ordinance provides for the employment of visiting tuberculosis nurses by the health commissioner in the proportion of one nurse to each one hundred cases of reported tuberculosis in the city; that these nurses shall be paid the same salary as that provided for municipal nurses; that these nurses shall visit professionally all reported cases of tuberculosis unless requested by writing not to do so; that the health commissioner be empowered to establish such supply stations as may be deemed necessary for the professional use of tuberculosis nurses; that the purchasing agent be directed to purchase all requisitions of the health commissioner, such supplies as may be deemed necessary for the professional use of tuberculosis nurses; and that the health commissioner shall divide the city into appropriate sections or districts, assigning one or more nurses to each district formed according to the number of tuberculosis cases therein.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession up to and including the week ending July 10, 1915.

Contributions:—

Receipts previously reported,	$7312.00
Dr. L. O. Tarleton, 1st Lieut. U.S.A., Manila, P. I.,	5.00
Norwich Medical Association, Norwich, Conn.,	25.00
Westmoreland Co. Med. Soc., Mount Pleasant,	25.00
Elmira Academy of Medicine, Elmira, N. Y.,	50.00
Dr. Angue McLean, Detroit, Mich.,	30.00
Dr. Emery R. Hayhurst, Columbus, Ohio,	5.00
Benton Co. Med. Soc., Rogers, Arkansas,	5.00

Stamford Med. Association, Stamford, Conn.,	25.00
Buchanan Co. Med. Soc., St. Joseph, Mo.,	27.34
Capt. W. H. Allen, M.C., U.S.A., Manila, P.I.,	10.00
Yakima Co. Med. Soc., North Yakima, Wash.,	25.00
S. E. B., Pittsburgh,	50.00
Dr. George B. Broad, Syracuse, N. Y.,	10.00
Dr. Winfred Wilson, Memphis, Texas,	11.50
Delta County Med. Soc., Escanaba, Mich.,	10.00
Total receipts,	$7,625.84
Previously reported disbursements,	7,310.04
Balance,	$315.80

F. F. Simpson, M. D., Treasurer,
7048 Jenkins Arcade Bldg., Pittsburgh.

The Illinois Medical Journal for July contains the reports and minutes of the 65th annual meeting of the Illinois State Medical Society held in Springfield, May 18-20. The membership May 1 was 6501, a gain of 408 during the year. The following salaries are noted: Editor, $900.00; assistant editor, $720.00; secretary, $600.00; assistant secretary, $300.00; stenographer, $741.00; treasurer, $50.00. The secretary says, "The collection of the *per capita* tax has been difficult during the past year, due, no doubt, to the number of members who were secured through personal solicitation and the money stringency which in some localities has been very serious, many people not being able to meet their living expenses, to say nothing of helping the family doctor meet his." The Committee on Medical Defense Survey says: "We find that the cost varies from 50 cents in Pennsylvania to $10.00 in Washington. We are unable to explain this apparent discrepancy in the cost, but only hazard a guess. It may be partly due to the fact that in the State of Pennsylvania there is not now in force a workmen's compensation act, and in the state of Washington there is a most rigid one, which protects the employer and leaves the doctor open to attack of personal injury attorneys." The committee in charge of medical defense spent a little over $6000.00 during the year and thinks that the *per capita* of one dollar will before long have to be raised. One statement of the committee would apply in Pennsylvania, "We wish to discourage the practice of rushing to your lawyer friend the moment a suit is threatened or filed, because he may be a very good lawyer in many cases, but absolutely worthless as a medical defense attorney."

The Massachusetts Medical Society held its 134th annual meeting in Boston, June 8 and 9. Under the report of the Committee on Public Health we find the following: At the request of the Committee on Philanthropies of the Massachusetts Federation of Churches, members of the Public Health Committee of the Massachusetts Medical Society met with them to see if some method of coöperation might be devised whereby the doctors and ministers throughout the state might coöperate for the benefit of their local communities. It was voted: That it is the sense of the meeting: (1) That more intimate and practical coöperation should be established and maintained between the Massachusetts Federation of Churches and the Massachusetts Medical Society, for the purpose of improving the health of this commonwealth. (2) That the churches of every community (through their local federation where one exists) should consult and coöperate with its physicians in matters of public health. (3) That the fundamental need is that of a competent health officer in every city, township or group of towns. (4) That whatever specific local needs in the line of health are discovered, should be taken up, both educationally and practically, by coöperation of the churches and the physicians. Following the meeting, addresses by a member of the committee have been made at three Social Institutes arranged by the Federation of Churches. One was at Springfield, one at Littleton and one at Middleboro. In all three the emphasis of the talk was upon the need of especially trained, full-time health officers in all cities and towns throughout the commonwealth. It is expected that this method will reach many people outside of the medical profession, rousing interest in various problems having for their object the improvement of the sanitary and social conditions of the people.

BULLETIN EXCERPTS.

Monthly, Bucks.

What One Has, is worth little or much according to how it is used and to the returns it brings. The man who makes good in medicine is he who cultivates a habit of unfailing courtesy toward everyone with whom he comes in contact; who never allows his equanimity to be ruffled or his poise to be perturbed. Children learn to love him, the poor respect him, timid patients trust him; his cheerful smile and ready handshake are as magnets that draw others to him. He gives bountifully of the finest and most comprehensive of human qualities and reaps the inevitable harvest that is his due. Be clever, smile.

Mirror, Fayette.

If You Go into a store to make a purchase you do not expect, and if you are offered some stale shop-worn article, you do not accept it from the merchant, much less pay for it. So it is with your patients when they come to your office or call you to their home they do not expect you to hand them out some stale shopworn stuff in the way of treatment and pay you for it. They expect you to be up-to-date and prescribe or administer the very latest things in the way of treatment. The best way to acquire a knowledge of what is new is to get out and mix with the fellows who are using them and have adopted them in their practice. If you can not visit the large medical centers and absorb some of the newer things, take a day off and mingle with your neighbors, come to the meetings of the county society; you will get some inspiration and go home refreshed in mind, spirit and body.

Bulletin, Westmoreland.

In a Series of Articles written by Mr. Joseph D. Ihmsen for the *Pittsburgh Gazette Times* on prohibition in W. Va., he states: After a little less than one year of prohibition of the liquor traffic the Huntington authorities have accumulated a mass of evidence to disprove the favorite statement of the "wets"—that there is more drunkenness and other crime in "dry" districts than in territory in which the sale of intoxicants is legalized. Comparison of the police dockets of the last twelve months with those of previous like periods is convincing. There is less drunkenness here than ever before; there are fewer arrests for petty crimes. And not only is there less petty crime than ever before, but business men, despite the industrial depression find themselves no less prosperous than they were before prohibition became effective. Collections are better, stores have sold more goods and got their pay more promptly than at any time in their past experience; the butcher, the grocer, the baker, the clothier have been getting most of the money that formerly went to the saloonkeeper. (Letters received from physicians of W. Va. verify the above statements. The doctors find collections better.—Ed. of *Bulletin.*)

COMMUNICATION.

REGISTRATION OF MEDICAL PRACTITIONERS.

————, June 30, 1915.

C. L. Stevens, M.D.,
Athens, Pa.

Dear Doctor: I graduated from the University of Pittsburgh in 1905, passed the state examinations and was registered in Allegheny County, in 1905. Later I removed to Fayette County but did not register there. I am now practicing in Franklin County and have received a notice from the prothonotary to pay a license fee. It has been my understanding that one properly licensed and registered in one county need not re-register on removal to another county. Can you give me the law in this matter?

Thanking you in advance for your assistance in this matter,

Sincerely and fraternally,

Athens, July 2, 1915.

Nathan C. Schaeffer, Secretary,
Bureau of Medical Education and Licensure,
Harrisburg, Pa.

Dear Doctor: This office has received a letter from Dr. ————, who graduated from the University of Pittsburgh in 1905, passed the examination of the state board, received his license, and was registered in Allegheny County in 1905. Later he removed to Fayette County but did not register in that county. He is now practicing in ———— and wishes to know if it is necessary for him to register in Franklin County.

Similar requests are frequently received and if you will kindly give the ruling under the present law regarding the matter of registration, we will publish it in the JOURNAL for general information.

Thanking you for your courtesy in this matter, I remain,

Faithfully yours,
C. L. STEVENS, Secretary.

Harrisburg, July 6, 1915.

Dr. C. L. Stevens,
Athens, Penna.

Dear Sir: Under the present law, it is not necessary for Dr. ———— to register in the prothonotary's office of Franklin County. Physicians are expected to send us information for our list of cards of registration.

Yours truly,
NATHAN C. SCHAEFFER,
Sec'y, Bureau Medical Education and Licensure.

REVIEWS.

CHILD TRAINING AS AN EXACT SCIENCE. By George W. Jacoby, M.D., Consulting Neurologist to the Hospital for Nervous Diseases, The German Hospital, The Beth Israel Hospital, The Red Cross Hospital, and The Infirmary for Women and Children in the city of New York, New York. With full bibliography and thorough index. 384 pages, 15 full-page illustrations. $1.50, net; by mail, $1.62. Funk and Wagnalls Company, New York.

In this treatise Dr. Jacoby aims to supply a need for a standard scientific, and reliable popular work based on the principles of modern psychology, medicine and hygiene. He shows that while we can not demand that physicians, teachers and parents be educated to a like degree in the sciences affecting child training, yet necessary prophylactic and therapeutic influences can be adjusted by the harmonious coöperation of these three. This can be accomplished only through their meeting on common ground, which this book seeks to furnish to each. After presenting a study in the relationship of cause and effect in natural processes the author concludes that "the methods of instruction deduced from the natural laws of the child's development enable us, notwithstanding a limited brain capacity, to augment man's efficiency so as to fulfill the demands made by cultural progress and to do this without overtaxing the normally constituted child. But it also means that in the psychopathically tainted child much more can be saved than ever was dreamed of by the older pedagogy, and that many more children can be brought up to become useful individuals than we formerly thought possible." To train each child as a special individual is shown to be the only rational process, and therefore explains and favorably comments on the Montessorri Method. I. M. S.

MEDICAL ELECTRICITY AND ROENTGEN RAYS. By Sinclair Tousey, M.D., New York. Second edition. Philadelphia: W. B. Saunders Company.

This work is very comprehensive in its scope. Much space is devoted to elementary electricity and magnetism, and this portion of the text could have been condensed without impairing the value of the book.

The advance in electrotherapeutics, roentgenology and radiotherapy in the last few years has been very rapid, so it is obviously impossible to produce a book that is right up to date. Especially is this true in roentgenology, and the chapter in this book devoted to the diagnosis of gastrointestinal diseases is quite inadequate. For instance, the author says in speaking of the duodenum, "Radiographs, as a rule, do not show this part of the intestine at all, or only a shadowy outline, making a curve around the pylorus with its concavity toward the left." In view of the exactness with which duodenal ulcer is being diagnosed by radiographic and fluoroscopic means, a statement such as the above will hardly meet with the approval of the men who have accomplished so much in this particular line of work.

The book is well illustrated, quite readable and contains much information that ought to be of use to the beginner in this invaluable branch of medical science. S.

THE NEXT GENERATION. By Frederick A. Rhodes, M.D., President Economic and Sociologic Section, ex-President and ex-Secretary Eugenic Section of the Pittsburgh Academy of Science and Art; Chairman, Pittsburgh Morals Efficiency Commission, Pittsburgh. Boston: Richard G. Badger. Price $1.50 net.

This practical discussion of man's nature and environment explains why we are what we are. "No attempt is made nor it is thought possible to provide any scheme of society where a state of idealism can for generations to come attain whereby all will be physically and morally perfect. Attempts only are made to show how it is possible by prevention and education to eliminate much of the misery, sorrow and crime in this good old world." The author treats eugenics in the broadest sense, including in the term the influence of both heredity and environment. In so doing he shows the relationship of each to the others of physiology, sociology, theology and philosophy, and places due responsibility on each.

Many inconsistencies in our laws and social standards are pointed out in ways similar to the following: "Why is treatment of the defective necessary? The answer is that society demands it. These defective persons and their progeny are a menace and expense to good society. Now, does society care? How many men in the best homes, men with great fortunes whose power is felt far and wide, do more real harm to society than many of our so-called degenerates?"

By extensive research, sane reasoning and pertinent questioning the author aims to "cause good earnest people to pause and listen to what the wild waves are saying" but encourages the reader by a thread of optimism running through every chapter.

It is hoped that in the next edition the copy will be a little more carefully edited to eliminate a few such expressions as "our most loftiest ideas."

I. M. S.

THE CANCER PROBLEM. By William Seaman Bainbridge, A.M., M.D., Professor of Surgery, New York Polyclinic Medical School and Hospital; Surgeon and Secretary of Committee of Scientific Research, New York Skin and Cancer Hospital; Consulting Surgeon, Manhattan State Hospital, Ward's Island; Honorary President, First International Congress for the Study of Tumors and Cancers, Heidelberg, 1906. 534 pages, with 38 illustrations. Cloth, $4.00 net. New York: The Macmillan Company, 1914.

The author has not attempted "to give a complete work on the surgical treatment of malignant neoplasms" but he has given the profession and the public a book that should be of special interest at this time when so much attention is given to cancer. The scope of the work is shown by the section headings which are history; general distribution; statistical considerations; etiology; histopathology; cancer research—a résumé of the world's work; clinical course, diagnosis, possible errors in diagnosis; prophylaxis; investigation of "cancer cures"; nonsurgical treatment; surgical treatment; irremovable cancer; institutions for the care of cancer patients; the campaign of education.

The reference value of the book is enhanced by fifty-two pages of a selected and classified bibliography, a three-page index of authors and a twenty-one page general index of subjects. This issue of the Journal being a Cancer Number no apology is necessary for reproducing the last chapter of Dr. Bainbridge's book, entitled "The Outlook," in full.

"The great advance in knowledge concerning cancer made during recent years involves the elimination of a number of theories of the etiology of the disease.

"Cancer is no longer to be considered merely as the development of embryonic 'rests' stimulated to unfold their latent powers of growth.

"There are stronger reasons now than ever before for abandoning the theory that cancer is a disease which is directly communicable by infection, and no indisputable evidence has been offered to prove that it is transmitted by an intermediate host.

"Much new evidence has been advanced as to the causative influence of chronic irritation in some forms of cancer. A possible explanation of the disease has been found in the variations to which cells are liable in the direction of losing their normal differentiation, and, more rarely, of acquiring powers of continued growth.

"There is urgent need to determine whether Ehrlich is right in assuming a peculiar form of immunity 'atreptic immunity' because of the etiological application made of it. According to this view, circumscribed groups of cells grow into tumors because their appetite for taking up food is greater than that of the rest of the body.

"It is equally necessary to determine whether the workers of the Imperial Cancer Research Fund are right in denying the existence of atreptic immunity, their conclusions, likewise, having important etiological bearings in that they appear to have revealed the fact that continuous growth results as a consequence of a loss of power of cells to control their own growth, or to call forth resistance to growth. This point is of the utmost importance, since its firm establishment would eliminate the whole group of etiological and working hypotheses which seek for the cause of cancer in stimulus to development.

"The whole trend of investigation points not to a single cause, but to a number of causes of cancer. There is reason, too, for the belief that the disease to which the term cancer is applied is still a composite, despite the fact that syphilis, tuberculosis, actinomycosis, blastomycetes, and even leprosy, which were formerly confused with cancer, are now known to be separate entities, each with its specific cause. Who can tell to what further extent this process of differentiation and isolation may lead? The time may come when carcinoma and sarcoma will be separated into diseases undeniably distinct one from the other.

"While this complexity of etiology remains unsolved, the prevention of cancer can not become a truly practical problem, and the only methods which can be recommended with reasonable likelihood of diminishing the prevalence of cancer are measures which have for their purpose the elimination or avoidance of all forms of chronic irritation.

"From the moment it was recognized that chronic irritation and acute trauma may induce cancer, it was inevitable that a large field for dispute would be opened in connection with accidental injuries, negligent litigation, workingmen's compensation acts and insurance, and similar matters. Whether injury has or has not caused cancer in a given case is, of course, primarily a medical and not a legal question. Yet, inasmuch as a secondary legal aspect may arise, both science and common sense require that rational criteria be fixed for determining whether a cancerous condition has been caused or induced or superinduced by an earlier irritation, by trauma, or by other injury. The elucidation of this phase of the problem furnishes, therefore, an important field of research for the future.

"Pending the time when the cause or causes of cancer shall have been discovered, and when it will be possible to cure the disease by other means than by surgical removal, what is the outlook for the cancer problem and the cancer patient? In the light of modern cancer research is the prospect for the solution of the problem a hopeful one? Are we justified in encouraging the belief that the outlook for the patient is less despairing than formerly?

"The study of the various phases of the cancer problem which are outlined in the preceding pages must convince everyone that the concentrated effort of so many earnest and intelligent investigators is slowly but surely clearing away much of the mystery which for centuries has obscured the questions of the initiation and the progress of the disease.

"With the careful clinical and laboratory examinations to which we now know all patients should be subjected when they present themselves for treatment, there is justification for the belief that in future a progressively smaller and smaller proportion of cases of cancer will be wrongly diagnosed, and consequently wrongly treated.

"With the campaign of education directed against the neglect of the many small things which may lead to the graver condition known as cancer; with the increasing mastery of the predisposing causes of the disease, and with the greater willingness on the part of individual patients to present themselves for surgical treatment for its early manifestations, there is hope that the future will be marked by a progressive decrease in the number of persons who come within the category of those having inoperable and irremovable cancer.

"With the perfection of surgical technic which characterizes modern practice, and with the intelligent utilization of the various adjuvant methods and measures which may be employed to alleviate suffering, the lot of those who are no longer amenable to surgical cure is certainly far less miserable and hopeless than was that of persons similarly afflicted even a decade or two ago.

"While it can not be gainsaid that the cancer problem to-day is still fraught with perplexity and uncertainty, one indisputable fact stands out in bold relief, serving as both guide-post and danger-signal for the present and the future—*If cancer cells be cut out soon enough a permanent cure is effected!* This alone is sufficient to warrant the statement that we are 'travelling hopefully!'"

S.

BOOKS RECEIVED.

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Record of the Medical Class of 1900, University of Pennsylvania. Fifteenth Reunion; Banquet at Rosedale Inn, Essington, Pa., June 11, 1915. Reunion Committee: Howard Childs Carpenter, James H. Baldwin, Rae S. Dorsett, William S. Johnson, Edwin T. Robinson.

University of Pennsylvania. Tenth Report, Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. Pulmonary Acoustic Phenomena, by C. M. Montgomery, M.D., of the Henry Phipps Institute; and E. A. Eckhardt, Ph.D., Department of Physics, University of Pennsylvania, Philadelphia. Eleventh Report. A Study of the Housing and Social Conditions in Selected Districts of Philadelphia, by Frank A. Craig, M.D., Instructor in Medicine. Published by the Henry Phipps Institute, Seventh and Lombard Sts., Philadelphia, 1915.

The Treatment of Gonorrhea and Its Complications in Men and Women; for the General Practitioner. By William J. Robinson, Ph.G., M.D., Chief of the Department of Genitourinary Diseases and Dermatology, Bronx Hospital and Dispensary; Editor of *The American Journal of Urology, Venereal and Sexual Diseases;* and of *The Critic and Guide.* New York: Critic and Guide Company, 12 Mt. Morris Park West. Price $2.50.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M.D., Surgeon to the Massachusetts General Hospital; Associate in Surgery at the Harvard Medical School. Eighth Edition. Revised and Enlarged. Octavo volume of 734 pages, with 1057 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Polished Buckram, $6.00 net; Half Morocco, $7.50 net.

Alveolodental Pyorrhea. By Charles C. Bass, M.D., Professor of Experimental Medicine and Foster M. Johns, M.D., Instructor in the Laboratories of Clinical Medicine at the Tulane University Medical College, New Orleans, La. Octavo volume of 167 pages, with 42 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

Diarrheal, Inflammatory, Obstructive, and Parasitic Diseases of the Gastrointestinal Tract. By Samuel G. Gant, M.D., LL.D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum, and Anus at the New York Postgraduate Medical School and Hospital. Octavo of 604 pages, 181 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth $6.00 net; Half Morocco $7.50 net.

1914 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 814 pages, 349 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth $5.50 net; Half Morocco $7.00 net.

SOCIETIES.

PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting of April 6, George M. Coates in the chair.

Orthodontia in Its Relation to Rhinology. Dr. Mershon: The orthodontist has long realized that some plans of his work were retarded or inefficient, did he not have the coöperation of the rhinologist in the treatment of these cases, and it has been his custom to refer the patient to the rhinologist before he would undertake the correction of the dental irregularities; at the same time the orthodontist has had the growing belief that there are many phases of the orthodontic treatment that might be of assistance to the rhinologist in acquiring satisfactory and permanent results of his work.

Dr. Mershon outlined some of the relations that exist, which are of mutual interest to the rhinologist and orthodonist. A large percentage of those cases coming to the orthodonist for treatment are those that have at some time been associated with nose and throat difficulties. Almost all the cases that the orthodonist has to treat have to do with a lack of development and the lack of development of the dental arch, closely associated as it is with the nasal arch, may be an even larger factor than we have been able to realize.

We of course always recognize the high, narrow arch with the protruding anterior teeth. If we examine these further we will also recognize that the lower teeth in their relation to the upper ones are distally disposed, usually to the extent of a bicuspid. We will notice that the lower anterior teeth are usually supererupted until they are in contact with the gum tissues of the palate. We will also notice that there is an apparent and probably an actual lack of development of the bone associated with the nasal tract, together with an absence of normal lip function. There is also an unusual appearance of lack of general development with a corresponding absence of physical tone.

Our considerations are under three heads (1) the lack of development of the nasal tract, (2) the absence of normal lip function, (3) habit.

In all cases of marked pernicious mouth breathing there is a lack of space in the nasal tract for the patient to acquire a sufficient amount of air. In the lack of nasal space we have three phases: (1) The pathological conditions of the nasal membranes and hypertrophy of the soft tissue. (This phase is of course of no concern to the orthodontist.) (2) Cases of deflected septum; this may be made possible by the maldevelopment of the dental arch, such as an abnormally high palate, presenting an insufficient amount of room for a normally developed septum. (3) A lack of lateral development of those bones forming the outer walls of the two nasal tracts.

At this point the pertinent question arises as to whether there is anything that the orthodontist can do that may assist in the correction of the maldevelopment of these factors. The orthodontist knows by actual experience that there is practically no limit to the amount of development that he may acquire with the proper use of forces upon the dental arch. And there are many evidences which seem to prove that the development of the dental arch also has its effect upon the development of those bones associated with the dental arch and therefore, step by step, the influence will be felt upon those bones which go to outline the nasal tract.

The suture of those bones comprising the nasal tract are capable of being influenced in a manner to give an added area. In the treatment of these cases, we are chiefly concerned with patients during the period of most rapid development and we know that at this time the sutures are undeveloped and forces, applied in the proper direction and over a proper duration of time, would cause these sutures to be opened up and developed in a direction that would give us a much larger nasal tract.

The treatment of these cases to produce the desired results possess many factors of the utmost importance: To begin with, the age of the patient must not be overlooked. The best results are possible to be obtained up to ten years of age; however, after puberty results are not impossible; they are obtained at a much greater effort and diminishing in satisfaction as the patient grows older. The best time to begin treatment where results of this kind are desired would be from four to seven years of age. Nature's normal period for the lateral development of the dental arch is during the time of the development of the permanent incisors, this should be completed at seven years of age. Any lateral development of the dental arch that has not taken place normally at five or six years of age, must be produced artificially, or never acquired. There is a pernicious idea existing in the minds of the medical and dental profession, even to the present day, that any treatment of this sort should be deferred until the patient is approximately twelve years of age. This is a most dangerous idea and results in a great deal of harm and should be uprooted as soon as possible.

Next the character of the work required to produce these developments artificially is one that requires a most careful consideration. It is humiliating to the orthodontist to have to admit that until a few years ago the character of his work, in the correction of dental irregularities, was such as to produce results exactly opposite to those which he desired. For instance, the moving of teeth was done in such a way as to tip the crowns of the teeth outward, consequently at the same time the apices of the root or to be more definite the apical arch was contracted, therefore having a tendency to contract the nasal arch rather than to expand it, and it is unfortunately true that considerable orthodonic work is being done in the same manner at the present time. In order that the desired results should be obtained, it is necessary that the forces applied upon the teeth will be such as to carry not only the crowns outward but the entire root and therefore produce a stimulation in an outward direction of those bones associated with the roots of the teeth and in this manner to stimulate an outward development of the bones step by step until all of the bones forming the nasal tract and the base of the skull shall also be stimulated to develop outward in their lateral direction.

The rapidity with which this work is done is also a matter of very careful consideration. We know that bone development takes place very slowly and in order to acquire development of any amount, it must continue over a considerable period of time. Therefore the rapid movement of teeth, while it may be attended with good results as far as the relation of the teeth themselves are concerned, would be of little value as influencing the development of those parts with which we are concerned.

This relation also has an important bearing upon the suture changes which have already been spoken of. A force brought to bear upon a suture, will be very quickly attended by changes—those changes in order to be permanent must be retained for a considerable length of time, until the bone building has taken place upon the edges of the suture.

The physical condition of the patient is one which also requires careful attention. Every aid should be enlisted that will obtain the most satisfactory condition of all vital activities to insure the best bone development, otherwise our efforts will fail our highest expectations.

The relation of the lips is a condition that requires careful consideration. Long continued mouth-breathing, together with the typical relation of the teeth associated with these cases, brings about a malformation of the lips which has much to do with the prognosis of these cases. The upper lip is very much shortened because of the protrusion of the upper anterior teeth, while the lower lip, because of the lack of prominence of the lower anterior teeth, together with protruded superior incisors, is caused to roll outward and downward. These conditions must be corrected, if we are to hope to reëstablish normal breathing.

Dr. Ross H. Skillern: I became interested in this subject about three years ago, as a result of my daughter's condition. At three years of age she was operated on for adenoids and tonsils, and two years later was reoperated on. I sent her to Dr. Mershon to get her teeth straightened out. Nasal respiration was improved and she began to pick up. Not one of you here have operated and have not had the mother of the patient say that she was disappointed in the result. We are all familiar with this. Why do we have this facial deformity? It is primarily due to interference with normal nasal respiration. Nasal respiration has everything to do with the development of the nose and accessory sinuses. Lack of nasal respiration causes these deformities in the upper jaw. Adenoids have caused lack of nasal respiration, or inability to breathe properly through the nose. Why do we not cure our patients as soon as we take out the adenoids? The younger the person the more animal matter we have. The longer the nasal respiration is interfered with, the greater the deformity and the more difficult to restore the normal condition. I think now that we should work hand in hand with the orthodontists.

Dr. Rowe: I know every statement to be very conservative; I would be more radical in my remarks. When the orthodontist has done his work there is very little left for the rhinologist in respect to respiration, aside from the removal of adenoids and tonsils. Nasal obstruction is associated with malocclusion. The question arises, is there nasal obstruction in cases where there is no occlusion? Personally, I believe that cases of nasal obstruction are comparatively rare where normal occlusion exists. The loss of a single tooth creates loss of development of the maxillary bones. I personally have never seen a case of nasal obstruction with normal occlusion. It was shown conclusively that one could anticipate the probable malocclusion of the permanent teeth.

Dr. Huggins: I wish to sing a word of praise to the orthodontist. I believe orthodontia to be the long sought for missing link. The orthodontist has taught us proper occlusion. We have never appreciated it. They have started to teach that it is possible to get air passage not by removing the bone, but by adding bone.

Dr. Mershon: When teeth are moved, the bone is not moved with them: this is a fact not clearly understood by dentists and medical men; pressure produces stimulation on the bone.

Dr. Weeks: It has been my conclusion that sucking of the thumb will produce almost the typical conditions as produced by mouth breathing. If, within six years after the latter complement of deciduous teeth is presented, you do not see spaces, lack of lateral development will occur.

ROBERT F. RIDPATH, Reporter.

COUNTY SOCIETY REPORTS.

BEDFORD—JUNE.

The Bedford County Medical Society met in Bedford June 28. There were present the following members: Drs. Ayers, Brenneman, A. and W. F. Enfield, Gensimore, Henry, Lindsey, Price, Shimer, Shoenthal and Smith. Dr. W. A. Nason, Roaring Spring, councilor for the Fifth District, and Drs. T. W. Cook, Osterburg and H. R. Brightbill of Bedford were also present.

Dr. Nason gave a paper on "The Cancer Problem," which was followed by a general discussion.

Cancer is supposed to be caused by the development of embryonic cells, which were misplaced in the body and as a result of some disturbance of nutrition, or, on account of an irritation of some kind to the part affected, take on an unhealthy growth, enlarging to form a tumor, and then die, producing a malignant condition. Cancer never stands still and never stops; it is a rapid mushroom growth of unhealthy cells which continue to pile up, but never attain their complete form and cease developing as normal cells do when making a repair of bodily injury in a healthy system. This unrestricted growth may be the result of improper metabolism or caused by a change or deficiency in the fluids of the system.

Physicians realize that care and vigilance in the observance of the rules of health, and the use of the above means of diagnosis, is the only solution for this malignant disease, which is rapidly increasing, and for which no specific germ has been found and no virus used successfully as an antitoxin to overcome it. The real work of eradicating the malady lies just as much in the hands of the people generally as it does in the hands of doctors. It is the hope that they will wake up and take advantage of the assistance offered; pay attention to the jagged tooth, ill-fitting body harness which rubs and irritates, and all blood diseases, and have an investigation made to determine the internal make-up of all tumors.

Mention was made of the fact that free, scientific bacteriological examinations of nearly all fluids and tissues of the body, are offered by the State Board of Health of this Commonwealth, under the direction of Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania, and Dr. B. F. Royer, Chief Medical Inspector, who report from this department positive conclusions, to local physicians who send the specimens of sputum, blood, or diseased tissues, etc., which makes the diagnosis of all cases positive, and not uncertain, as in the past. WALTER F. ENFIELD, Secretary.

BERKS—JUNE.

At the meeting of the Berks County Society, June 8, Dr. A. H. Baucher gave the "Report of an Abdominal Case." This case was of interest to him because of the failure rather than success in effecting the desired cure. S. N., housewife, aged sixty, in August, 1914, began having pain in the lower left quadrant of the abdomen, usually in the morning shortly after rising and lasting several hours when it subsided for the day. There was history of a previous attack of pain, two years before, which lasted a week; patient said she then passed corruption per rectum and had no further trouble. When the present trouble began it was diagnosed colitis and treated as such; however, the pain became more severe; there was no vomiting; temperature was practically normal. A vaginal examination revealed only a retroverted uterus, besides some abdominal tenderness.

On January 17, 1915, an *x*-ray examination was decided upon and Dr. Pfahler reported that he found two constrictions, one on the left side about two inches below the brim of the pelvis in the descending colon and the other on the right side about an inch below the pelvic brim. He was convinced that there were constrictions at these two points and believed they needed surgical attention. Examination of the stomach showed a condition that would lead him to make a diagnosis of carcinoma if the patient had any stomach symptoms. In the greater curvature of the stomach there was a serrated indenture partially obliterated when the stomach was fully distended. He said he was forced to conclude that there was an organic lesion there, and he suspected an early case of carcinoma, though he could not be positive.

The patient was operated on by Dr. Müller. Examination of the stomach failed to reveal any evidence of ulcer or cancer. There were no adhesions, no thick spots, no enlarged lymph nodes; gall bladder, pancreas, spleen and liver were normal, and there was no ptosis. A small fibroid, two centimeters in diameter, was found in the posterior wall of the uterus, both tubes were buried between the broad ligament and the pelvic floor, and both ovaries were hard and fibroid. The right tube, the small fibroid and appendix were removed and all adhesions separated. Her recovery was slow and for a time it seemed that the abdominal pain had disappeared, but she is again complaining of abdominal pain, which is not so severe as formerly.

Dr. J. S. Borneman gave a report of "Sore Throat Epidemic in Boyertown Last Year." In some families every member, in one including the grandmother, was affected. The symptoms were vomiting; headache, sometimes very severe; the uvula much enlarged, in one case three times the size of the normal tonsil. In twenty-four hours the tonsils were covered with membrane. There was seldom any membrane on pharynx, but it covered the entire tonsil; where it yielded to treatment, the patients usually recovered in twenty-four hours. In cases which did not yield, the membrane was between the tonsils and pharynx. In one case which was diagnosed membranous croup, 15,000 units of antitoxin were used without avail. Another patient died within twenty-four hours. In all that died, death was due to laryngeal stenosis.

In many cases there was a rash resembling scarlatina; also rheumatic pains, enlarged cervical glands and quinsy were frequent. The temperature was 104°. The edema of the larynx persisted for some time; also loss of voice, in one case continuing seven weeks. In other cases voice returned in one or two weeks. Dr. Borneman considered the cases to be streptococcic sore throat or angina, while the complicated cases were associated with staphylococcic infection. The treatment included magnesium salicylate, phenacetin, potassium chlorate; for rheumatic symptoms, sodium salicylate.

"Bacterins and Vaccines" was presented by Dr. E. R. DeLong. Dr. DeLong himself took Pasteur's treatment for rabies, nine years ago, and was cured. In using bacterins he uses Mulford's or Sherman's No. 10, 30, 35, 40. The dose is graded according to the weight, giving adult dose to one weighing 150 pounds and one third dose to one weighing 50 pounds. In one case of typhoid fever he gave the patient No. 30, which contained 250,000,000 killed typhoid bacilli. The next day the temperature dropped to 99° and remained there four days, then went up. He then gave the patient 500,000,000 and the next day 1,000,000,000. After temperature had been normal four days he let patient get up.

In one case of pneumonia with solidified lung a full dose of one c.c. was given each day for five days, then every other day for five times he gave No. 35. Patient recovered. In bone felon in thumb, one and one half ampoules of No. 10 were given in axilla. Dr. DeLong uses bacterins also in rheumatism, using first No. 10, followed in five days by No. 35, and seven days later by No. 40.

"Report of Three Cases of Epilepsy" was read by Dr. W. E. Hunsberger. Case 1. A boy of thirteen years had six daily attacks for which Dr. Hunsberger prescribed five grains of potassium bromid three times a day. Attacks soon became less frequent and in a few months disappeared, never to reappear, although he became a furnace boss and was much exposed to great heat; he lived to sixty-five years of age. Case 2 was a relative of the first patient, of dissipated habit, and had epileptic seizures after dissipation; he was apparently cured by the use of bromids. Case 3. Patient had an attack of typhoid fever which was followed by epileptic seizures during sleep; later they occurred in day time, were irregular in character. Bromids of sodium, calcium, lithium and ammonium were prescribed. While taking the medicine he was free from attacks.

In the discussion on epilepsy Dr. Keiser said that some cases of epilepsy have been found to be due to ocular defects, such as muscular imbalance and high grades of astigmatism, which being corrected, the epilepsy disappeared. Other patients were found to have nasal defects, such as enlarged turbinals and deflected septums. Correcting these defects cured the epilepsy. Othr cases should have a Wassermann test to prove or exclude a specific cause. Clara Shetter-Keiser, Reporter.

CARBON—MAY.

The Carbon County Society met in the American House, Mauch Chunk, May 23, with sixteen members present.

A paper on "The Early Treatment of Breast Tumors as a Part of Cancer Prophylaxis" by Dr. Donald Guthrie, Robert Packer Hospital, Sayre, was read by Dr. Walter Lundblad of that Hospital, Dr. Guthrie being prevented from attendance.

Dr. Guthrie stated that cancer of the breast usually begins in a benign form and even when it is malignant, or cancerous, when discovered, it remains a local disease for a time, and if taken early can be completely and permanently cured by a thorough operation. In the past the fault of the delay has lain at the door of the patient. The public is becoming educated through daily press and magazines to the danger of these tumors, and it behooves the doctor to do his part by urging the patient to prompt action. In the majority of cases there is no pain in cancer of the breast, and this is a very important fact, as most laymen feel that a mere painless lump can not be dangerous.

It was further stated that individuals had been reported with cancer at an early age, the author having seen patients at twenty-two and twenty-three years of age and reporting one, still younger, seen by another doctor. This fact makes it necessary that tumor bunches on the breasts of even very young girls should be removed, not because they may be cancer at that time, but because it is known that a great majority of them will develop into cancer. He also pointed out particularly that a successful campaign along this line will mean that the deaths from this one type of cases alone, that is, cancer of the breast, will reduce cancer mortality twenty per cent.; and that the same care should be taken to eliminate the points of irritation elsewhere in the body, such as small tumors of the skin existing elsewhere. By their campaign of publicity which is encouraging not only the great body of general practitioners, but is also arousing the public to the proper appreciation of the seriousness of this subject, the Cancer Commission hopes by this one and only means, namely, early diagnosis and treatment, to reduce the occurrence of cancer deaths to a great extent.

Dr. William L. Estes, St. Luke's Hospital, South Bethlehem, councilor for the Third District, was present and opened the discussion on the paper, the discussion being continued by Dr. J. W. Luther of the Palmerton Hospital, and Dr. Alexander Armstrong of White Haven.

C. J. BALLIET, Reporter.

CLEARFIELD—JUNE.

The Clearfield County Society, in a joint meeting with Elk and Jefferson County Societies, met at the Acorn Club rooms, Dubois, June 10. The meeting was called to order by President Gourley of the Jefferson County Medical Society, with a large attendance from eight counties. A motion prevailed that the regular order of business be suspended and that the scientific program be taken up.

Dr. William O. Sherman of Pittsburgh read a paper on "The Value of Early Diagnosis of Cancer," which appears in full in this issue of the JOURNAL.

A paper on "The Treatment of Epithelioma by Modern Radiation," was read by Dr. Russell H. Boggs, Pittsburgh.

Modern radiation consists in the use of radium and of the roentgen rays with the improved technic of either the Coolidge or the hydrogen *x*-ray tube. By these means advanced cases of epithelioma, formerly considered quite hopeless, have been cured. By experience, however, the mild and half-hearted treatment with small doses has proved to be useless but the massive or intensive treatment has demonstrated itself as most effective and seemingly permanent in its results.

Epithelioma is carcinoma of the epithelial structures of the skin or mucous membranes. The successful treatment of it requires the radical destruction of all the carcinomatous tissue. Although epithelioma is very common, its first appearance and symptoms have such a deceptively innocent character that it is often misdiagnosed and neglected by the average physician. It may be stated dogmatically that in a man over forty years of age, a persistent skin lesion is always liable to epitheliomatous degeneration. In such cases a physician who is not quite sure of his ground must as a matter of plain professional duty, consult a competent consultant.

Electrolysis, fulguration, carbon dioxid, superficial caustics, such as arsenic paste, sulphate of zinc, pyrogallic acid have been used in the treatment of epithelioma with some degree of success in particularly favorable cases, but they are irritating agents and, in so far, commonly dangerous. As far as our experience and knowledge of at present no method of treatment of epithelioma can be considered safe and sure as radiotherapy with its complete destruction of all epitheliomatous tissue and the consequent permanency of cure, its cosmetic results, its freedom from pain and convenience of application. As a result of the rapid development of radiotherapy in recent years the leading surgical authorities recognize its value as a legitimate method of treatment. Johnson's "Surgery" (1915) says that radium has proved its wonderful power for destroying cancer cells and that in lesions on the face it is superior to any other curative agent, in fact, it is wonderfully efficient in the treatment of any skin cancer. The prophylactic treatment is, of course the safest. The physician should, for this reason, always counsel the removal of excrescences such as warts, moles, ragged teeth, abrasion of alae nasi and insist on the proper and prompt treatment of cracked lips and the removal of any degenerative tissue. All such precancerous changes are now well recognized clinically. This is strikingly illustrated by a passage about Paget's disease in "A Year's Progress in Medicine and Surgery" (Vol. II., 1915): This at first seemingly insignificant perimammillary irritation is trifled with and treated with pastes and salves and yet it is essentially cancer of the most terribly malignant and deadly kind. It should be called Paget's cancer and attacked at once with the most improved and effective weapons.

The surgical removal of epithelioma can be justified only in those cases which require the excision of contiguous lymphatic glands. When there is no hope of the radical removal of cancer by excision an operation should not be resorted to because it will merely increase the activity of the growth and neither prolongs life nor diminishes suffering. Radium and *x*-ray should always be considered first because when properly applied with expert skill practically all epitheliomatous tissue have yielded to these agents with few recurrences. Particularly in epithelioma of the lower lip, radium and *x*-rays, by the massive method, have proved most efficient. According to Dr. Murphy a British medical journal analyzed a series of lip cancers extending over a period of twenty-five years. From the cases that could be traced it was demonstrated that when there was no ascertainable metastasis surgery was ineffective in fifty-two per cent. and in seventy-six per cent. of the cases in which there was glandular involvement at the time of the operation. Many of the cases would have received great palliation and some undoubtedly could have been cured by means of proper radiation, even when the diesase was recurrent and inoperable.

In every case conditions must determine whether the preference should be given to radium or to the *x*-rays, but radium should be selected invariably whenever there is a lesion on mucous membranes in cavities. In epithelioma of the mouth, throat, or of any mucous membrane the radioactive substances can be placed close to the lesion or growth and are, for this reason, superior to the roentgen rays, but when the lymphatics are involved the roentgen rays have an efficiency superior to any quantity of radium so far used for the treatment of such cases. To get the best results radium and the *x*-rays must be judiciously used together, each where it will do most good.

The treatment of epithelioma by means of modern radiation is, therefore, no longer a mere experiment, but a therapeutical method, the value of which is recognized by the best surgeons and advanced practitioners everywhere. This method has proved successful when all other means have proved powerless and hopeless. Since this method is so efficient there is no longer any excuse for professional negligence.

Dr. F. P. Ball of Lock Haven read a paper on "The Modern Treatment of Cancer"; Dr. Evan O. Kane of Kane, one on "Popular and Professional Prejudice against Radium"; Dr. J. C. Sullivan of Dubois, one on "Fundamentals of Cancer." (See preceding pages for Dr. Sullivan's paper.)

This was a most instructive symposium on that dread malady, cancer, and those who were absent missed the greatest medical meeting held in this section of the state for some time.

A short business session was called at which Vice-President Miller presided and delegates to the state society were elected.

After the meeting all were invited to the Country Club where a fine dinner was served.

Gillespie B. Yeaney, Reporter.

FAYETTE—June.

The meeting of the Fayette County Society was held, June 3, at Uniontown. The meeting was devoted to the subject of Cancer and after a short business meeting a lunch was served at the Brunswick Hotel. The paper of the evening was read by Dr. O. C. Gaub of Pittsburgh. When it is realized that one person in eleven reaching the age of thirty-five years will die of cancer attacking some part of the body, it is evident that this disease is one of the scourges of the human race. We do not know the cause of cancer. However we do know the age it is most common, and that heredity is not very important; that it is always a local disease at first and should be treated when it is in that state; and most important of all that we should guard against any conditions that are known to predispose to a cancer, having any source of chronic irritation removed. Any sore on the lip should be investigated by a physician, and bleeding from the bowels or irregularities of the menstrual flow should be a matter of grave concern until the reason is known for the bleeding. Stomach trouble in an individual over the age of thirty-five who has not suffered from a disturbance of that organ previously, which does not yield to treatment in a month or two should give rise to some anxiety as to the nature of the trouble.

We go to the dentist to guard against decay of the teeth and so why not educate our patients to come to us at stated intervals so that the stamp of health may be put on them? The time is coming when the individual who reaches the so-called cancer age, after the middle thirties, will submit to an examination semiannually of those parts of the body that are most liable to be attacked by cancer, such as the mouth, the lower bowel and stomach, and, in the female, particularly the generative organs and the breasts.

The treatment at the present time is to remove the cancer early while it is a local disease, and later the cure may be found just as in the case of yellow fever and diphtheria. When the cause of cancer is found it will be more easily prevented and cured, as the results we have obtained in typhoid, tuberculosis, yellow fever, and diphtheria show.

An interesting case of epithelioma of the back of the hand developing on the site of a powder burn scar was shown. The injury was received eleven years ago, remaining healed until three months ago when the patient noticed the formation of a small ulcer. He did not consult a doctor until two weeks ago and at that time the disease had progressed so far that nothing could be done.

G. H. ROBINSON, Reporter.

FRANKLIN—JUNE.

The Medical Society of Franklin County met at Hotel Franklin, Greencastle, June 15, President Kempter presiding and Dr. F. N. Emmert serving as secretary, with sixteen members present.

Dr. D. C. R. Miller of Mason and Dixon, an honorary member, read a practical paper on "Fractures of the Forearm." He discussed the various forms of injuries and spoke of the Rhea Barton and of Colles' fracture of the lower third; also the condition studied and reported by Dr. John B. Roberts of Philadelphia, which is the reverse of Colles' fracture. He referred to the difficulties often in the diagnosis as well as in the perfect correction of these fractures and urged the use of the x-ray as of value. Dr. J. W. Croft discussed the use of the x-ray, especially in fractures of the forearm, of which so many occur. This procedure will often prevent errors in diagnosis and treatment. Dr. W. F. Skinner said that he thinks the use of anesthetics is of more importance in these cases than the x-ray.

Dr. J. H. Swan discussed and urged the use of buttermilk as a diet and as of therapeutic value in sick children, especially where other food will not agree. He is in the habit of using the following: One tablespōon of sugar, one tablespoon of wheat flour, and one quart of milk, brought to the boiling point, and fed to the child as needed.

Dr. T. H. Weagley discussed "Retrogression of Rheumatism and Dyspepsia."

The several papers were discussed.

JOHN J. COFFMAN, Reporter.

HUNTINGDON—JULY.

The Huntingdon County Society met at the Huntingdon Club, July 8, at 1:30 P.M., with President Brumbaugh in the chair and twelve members present.

Dr. H. C. Frontz read a paper on "Pyelonephritis," in which he took up conditions of pyelitis and pyelonephrosis. Aside from surgical treatment he told of the importance of rest, proper diet and the use of urinary antiseptics.

Dr. G. W. Simpson read a paper on "Amputations." He considered amputation as an operation belonging to a group of injuries and conditions which make it more perplexing and give additional anxiety as to the end results, and call for very guarded action on the part of the doctor in charge.

In this group he enumerated amputations, fractures of all kinds, dislocations, malformations, etc.; in other words, everything visible alike to doctor, patient, and humanity at large. When an accident occurs sufficiently severe as to require amputation there are always many onlookers, some of them pseudophysicians, and nearly always some party or parties have decided the diagnosis, the proper treatment, the results, etc. All of this usually goes on before the doctor arrives and often prejudices are founded in the mind of the patient or his friends. There are always some wise heads around and, because they have seen the injury, they rely on their superior natural intelligence as to what should be done. Now this presumption on the part of the laity sometimes proves embarrassing. In abdominal, brain, spinal and special surgery of all kinds the surgeon is saved this annoyance. The first step is to get rid of onlookers by removing the patient to a hospital or to a private apartment, or by saying to the onlookers, that the law lays so much stress on sepsis that it does not tolerate any spectators; this will not offend them.

As to the technic of amputations, every present-day physician of a good standard school is easily qualified to do the operation and do it well providing he keeps his nerve. Every man nowadays knows his work or can not keep in the ranks. Dr. Simpson said that early in his practice there were some irregulars; thanks to wise laws, good schools, and efficient medical organization for their disappearance. The most momentous question, the one most puzzling to the surgeon in some cases is how to decide whether to amputate or not. Usually a cursory exmaination enables him to decide at once, but occasionally his judgment will be severely taxed. Under these circumstances and in a matter of such importance, and after he has called an honorable consultant lest he entail trouble he is not looking for and has no right to expect, probably he will decide to wait for complete reaction from shock when he will be better able to tell the true status of circulation, innervation, etc. Among several cases which the speaker recalled was one in his own family. The injury was caused by a gunshot wound which carried away a goodly portion of the proximal joint of the great toe. In his absence another physician was called who thought the toe would have to be sacrificed, but very wisely decided to wait for reaction, as well as Dr. Simpson's home-coming. The toe has since done duty on both baseball and football fields.

In injuries resulting from trauma involving considerable loss of blood, fright, exposure, etc., it is astonishing to note the change that will come with a little rest, a cup of hot soup or coffee, sinapisms to cardiac regions, perhaps a hypodermic of morphin or a heart restorative. Of course the physician will arrest all bleeding after which he will endeavor to soothe and comfort his patient until he can obtain the desired knowledge. The operation in itself is trifling compared with the grave responsibilities as to the justification of it. The speaker warned the younger men not to permit sympathetic dictations of parents or even suggestions from the family doctor when unwisely given, for the physician in charge will be the one held responsible for the work and he should be the boss.

There can be no comfort or feeling of self-respect among physicians unless they are truly honorable with one another, keep the skeleton, jealousy, out of their manly hearts and if in a given case one is called and from any reason he prefers not to do the work he should be willing to assist all he can the man who does do it and render his assistance in a loyal magnanimous way, during the work and what follows.

Aseptic technic, including the good results that are supposed to follow its use, has become almost imperative from a medicolegal standpoint. Because of surroundings Dr. Simpson has been compelled to disregard it, yet repeatedly he has had union by first intention by simply smearing fresh blood over the stump, then dusting with iodoform. When thoroughly done this seems to seal the wound hermetically and the blood in the interstices becomes organized promptly.

If any one is poor at handling a ligature or threading needles the speaker suggested that he thread plenty of needles beforehand, also cut ligatures into about six-inch lengths, throw a surgeon's knot in each piece loosely, leaving a loop one half an inch in diameter, and when needed pass the hemostat through the loop, pick up the vessel and snap the handle; no matter how slippery or sticky his hands are he has complete control.

J. M. Keichline, Jr., Reporter.

INDIANA—June.

On June 8, more than thirty members of the Indiana County Society gathered to discuss cancer. Dr. T. D. Stephens, referring to precancerous conditions, spoke of the necessity for looking after ulcers commonly found around the mouth, many of which become malignant. Gastric ulcer and injuries to the abdomen too often are followed by carcinoma. Dr. W. H. Nix reviewed the literature on skin cancer, Dr. F. W. St. Clair demonstrated the pathology and Dr. James Ward discussed *x*-ray treatment. The discussion developed the opinion that the education of the public concerning the importance of presenting themselves early for treatment was the most important truth referable to carcinoma.

Miss Morgart, superintendent of the Indiana Hospital, urged those present to make their patients familiar with the expenses necessary in securing hospital care. F. W. St. Clair, Reporter.

MONTGOMERY—May.

The regular meeting of the Montgomery County Society was held at Charity Hospital, Norristown, May 5.

Dr. William E. Ashton of Philadelphia addressed the society on "The Prophylactic Treatment and Early Diagnosis of Cancer of the Uterus." Next to the stomach, the uterus is the most frequent seat of cancer. Cancer of the uterus attacks almost exclusively women who have borne children. Lacerations of the crevix, are therefore, the most frequent of precancerous conditions to deal with in the prevention of cancer. Less is known of the predisposing causes of cancer of the body of the uterus, but neoplasms, polyps and chronic endometritis may result in this disease. The following rules are to be observed in prophylactic treatment: (1) After delivery, carefully examine the cervix and body of the uterus; (2) every woman over forty who has borne a child should be examined and if laceration is found, amputate cervix and curet; (3) cases in which there are eversions of the cervical mucous membrane, erosion, etc., curet the uterus and amputate the cervix; (4) when a laceration is discovered during a pelvic examination, curet the uterus, amputate or repair the cervix; (5) cases of marked endometritis should be curetted; (6) tumors and polyps should be removed. Dr. Ashton took up these points one by one, and enlarged upon them.

The paper was fully discussed by Dr. H. C. Welker. Our councilor, Dr. W. T. Sharpless of West Chester, who was present, discussed the paper, complimented the society on its attendance and good work and passed out many more compliments.

Dr. P. Y. Eisenberg presented two cases of empyema of the gall bladder successfully operated upon and cured by him.

The meeting, May 19, held at Pottstown Hospital, was largely attended, most of the members making the trip by automobile.

Dr. Barton Cook Hirst addressed the society upon "Modern Methods of Operating on Injuries of the Pelvic Floor and for Retroversion of the Uterus." He spoke of the failure of primary operations, and said that early secondary operation was often required. The anatomy of the pelvic floor must be carefully studied, and each structure restored to its original condition. The structures that must be repaired are the levatores ani, the pelvic fascia, the deep transversus perinei, and the bulbocavernosus muscle. All these structures can be laid bare by any one of the denudations most commonly used if the fascia is cut through or dissected up, but this must be done. As to backward displacement of the uterus, many operations have been proposed for its relief, but the speaker believes that there is only one that really gives a permanent cure, namely Alexander's operation and suspension through a Pfannenstiel incision.

Drs. Welker, Eisenberg, Wills, Heffner, VanBuskirk and Umstad discussed the paper.

After the lecture Dr. Hirst operated on two patients at the hospital, one demonstrating the correction of a retroverted uterus; the other a repair of the pelvic floor.

The society then adjourned to the dining room of the hospital, where the nurses served them with light refreshments.

The annual banquet of the society was held at "Three Tuns Inn" on the evening of May 27. This was the largest banquet the society ever held, there being sixty-five members and guests present. Owing to the flourishing condition of the treasury, the society furnished the banquet, without any help from the members. A most enjoyable evening was spent, and the banquet committee certainly deserves a great deal of credit.

Edgar Stanley Buyers, Reporter.

PHILADELPHIA -June.

The meeting of the Philadelphia County Society was held June 9, at 8:30 P.M., Dr. Seneca Egbert, first vice president in the Chair. The subject of Cancer was presented.

"Some Latest Thoughts on Carcinoma." Dr. Joseph McFarland: The amount of literature upon cancer, in the world to-day, is beyond the power of man to read. Cancer has been investigated medically, surgically, anatomically, morphologically, histologically, embryologically, chemically, immunologically, serologically, and, if there be known any other method of investigation that could be applied to it, that also, without doubt, has been tried. Notwithstanding all this, at the present time we stand very much where our forefathers stood in that we do not know what cancer is, nor do we know by what cancer is caused, nor are we any more sure that we stand on the threshold of this imporatnt knowledge than they were. The older men will remember when much stress was laid upon traumatic injury and the development of cancer. There was a certain amount of truth in that idea, and that much remains to-day. It has also been declared that in certain families cancer was more common than in others, and that cancer is therefore hereditary. As much truth as there was in this observation also remains to-day, but how to explain the inheritance we are by no means sure.

When it was found that microörganisms are instrumental in the production of disease it is not surprising that many bacteria were soon found in and supposed to be instrumental in the causation of cancer; but time seemed to disprove the theory, and to-day only a few remember about the bacillus of Scheurlen that engaged their attention for a time and then fell into well merited obscurity. Later it was urged that protozoa had something te do with the origin of cancer, then that yeasts or blastomycetes must be responsible for it. More recently we have been told that mites are concerned in the production of cancer, but apart from skin cancers there have been few cases in which they could be satisfactorily demonstrated. Lastly we have been told that worms are the cause of cancer, but this theory is so fantastic, and the discovery of worms in cancers has been so rare that little weight need be given the suggestion.

In recent years new methods of investigation have been developed, and all have been applied to cancer with most interesting results. The first of these is the method of implantation. This method of laboratory investigation with mouse cancer has shown that the tumors can be successfully carried through many successive generations of mice, and has revealed many facts of surprising interest, though unfortunately it must be admitted that it has not led to much increase of knowledge in regard to the etiology of cancer. So far as I have heard there is no man living at the present time who can, at will, initiate the growth of cancer in any kind of animal. The same is true of the cultivation of cancer tissue *in vitro*; we can make cancer tissue grow, but we can not start a piece of tissue growing in such manner that it will become carcinoma and continue as such when transplanted into animals.

Some interesting experiments have come to light with regard to certain chemical substances which have an influence upon epithelial cell multiplication. Thus inunctions with Soudan III., one of the aniline dyes, produces a condition resembling cancer, but when inunctions are stopped the condition gets well. It has recently been shown that in coal tar derived from gas distillation there is an element possessing a marked influence upon the growth of epithelium. This, however, though it accelerates cell multiplication *in vitro* and paraffin cancers, has not been shown experimentally to have the power to start a cancer.

In the last minute that remains to me I want to call attention to what seems to me an interesting chimera of the present time. We hear a good deal of the "precancerous stage" of cancer. The surgeon to follow me will undoubtedly point out that cancer of the stomach is more common in those who have had gastric ulcer, but ulcer can account for only a few cases. Carcinoma of the cervix is certainly more common in women who have borne children, but may occur in others. Cancer of the breast is probably more frequent in cases with "chronic cystic mastitis"; but this accounts for not more than twenty per cent. So that in these, so-called, precancerous conditions we have to do with conditions which lead to cancer just as traumatism does, just as heredity does, just as other things do and are not in themselves very important.

The very latest thought in cancer has been given us by Miss Maude Slye of Chicago in the March number of the *Journal of Medical Research*, 1915, a most elaborate and magnificent piece of work on the Mendelian inheritance of cancer in selected families of mice. The important fact in this latest discovery in regard to cancer is that cancer can be definitely bred into or out of families of mice and that its occurrence follows the Mendelian law of inheritance. It is not improbable that cancer in the human being will ultimately be found to be an inheritable condition, inherent in the germ protoplasm, as the result of the occurrence of cancer in remote ancestors.

"The Relation of Diet to Transplantable Tumors." Dr. Gordon Saxon: The basis of the paper is that of dietetic experiments performed at the Laboratory for Cancer Research at the American Oncologie Hospital. The Mendle and Osborne maintenance diet which is composed of a pure fat, a pure proteid, a pure carbohydrate and a salts mixture had a depressing action on tumor growth. In over one thousand "takes" in animals on a normal diet, and on the Mendle and Osborne diet there was not one instance of metastasis to distant organs. With diet rich in cholesterol, however, there was an increased percentage of "takes" and a remarkably high percentage of metastases. The litter unit was employed in all of the experiments, since there is greater uniformity of susceptibility, or immunity encountered, in the litter than in individuals.

"Factors Operative in the Production of Cancer of the Skin." Dr. Jay F. Schamberg: Cancer of the skin rarely, if ever, develops from healthy integument, from a cutaneous surface which is free from antecedent pathological defects. We see cancer of the skin develop from moles or nevi, either pigmented or unpigmented: from chronic fissures, old ulcers, scars, warty surfaces and keratoses. Keratoses constitute the most frequent preceding condition. Exposure to sunlight is perhaps one of the most important factors in the development of cancer of the skin. The following observations tend to support this view: (1) The seats of predilection of cancer of the skin are the face and hands; (2) classes of individuals much exposed to sunlight, such as sailors and farmers, show the highest incidence of cancer of the skin; (3) in full-blooded negroes who have a protracted layer of pigments, keratoses and cancer of the skin of the face are excessively rare, indeed, almost unknown; (4) children, afflicted with that rare affection xeroderma pigmentosum, exhibit a hypersusceptibility to the action of the solar rays, and usually succumb to cancer of the skin before the age of five; (5) there is a strong analogy in the *x*-ray cancers due to an allied form of radiant energy.

Cancer of the skin may also be due to the repeated action of mechanical and chemical irritants. Workers in soot (chimney sweeps), tar and crude paraffin are peculiarly susceptible to skin cancer. The long-continued or excessive ingestion of arsenic may lead to multiple cancer of the skin. A study of the causes of cancer of the skin argues against parasitism and in favor of mechanical, chemical and biochemical irritation as the productive factors. To be sure, there may be some deeper underlying cause or causes which disturb the balance between epithelial cell growth and the resistance of the adjacent stroma, in addition to the influence of the above-mentioned factors.

"What Do Nonoperative Measures Offer in the Treatment of Malignant Disease of the Skin?" was presented by Dr. Frank Crozer Knowles, and appears in full on a preceding page.

"What Does Surgery Offer the Patient with Carcinoma of the Stomach?" Dr. John B. Deaver: What surgery can offer in this condition depends upon an early diagnosis and immediate and radical operation with removal of the lesion, be it already carcinoma or gastric ulcer, which is a forerunner of carcinoma. There are no pathognomonic signs of cancer of the stomach in the operative stage. It is my routine practice to open the stomach if diagnosis is impossible by inspection and palpation of its wall. The surgeon has not yet been born who by sight or touch can always differentiate between carcinomatous infiltration and the inflammatory infiltrate of a chronic ulcer; between glandular enlargement due to metastases and that due to hyperplasia. Medical treatment has never cured a case of this disease and while the operative mortality is eighteen to twenty per cent. the mortality without operation is one hundred per cent. Cancer of the stomach causes about one per cent. of the total death rate; less than one per cent. of these cases come to the surgeon and less than one quarter are suitable for operation. The onset may be very insidious and patients enjoy apparently good health for months even when extensive metastases are present. Osler reports such a case.

In the treatment of benign ulcer of the stomach it is my practice to excise the ulcer when surgically possible, which is practically always the case. That a percentage of gastric ulcers do undergo malignant change has been proven. Wilson and McDowell have shown that out of a series of 399 pathological specimens examined by them the following was found:—

4.8 had ulcer with doubtful cancer.
15.8 had ulcer with positive cancer.
36.8 had ulcer with advanced cancer.
42.6 had cancer with doubtful ulcer.

Sixty per cent. of cancer of the stomach are situated in the pyloric region and are easily accessible. The minority are in the fundal portion, are usually extensions and are practically inoperable. A jejunal fistula is all that can be promised and is a glaring sign that some one has blundered. Absence of free hydrochloric acid has not been in my experience a constant sign. The *x*-ray in the hands of the expert is of great value in early diagnosis. The uncertainty which always hovers about any clinical idea of the pathological variety of cancer which may be found even in the evident case will practically always justify exploration in the hope that something may be done. The operation of choice is subtotal gastrectomy with wide excision of involved glands and a posterior gastroenterostomy. Polya's new operation of bringing a loop of jejunum through the transverse mesocolon and anastomosing it to the proximal end of the cut stomach in its entirety holds out the possibility of a greater area of extirpation. The end results of operation upon carcinoma of the stomach at present suffer from the fact that in most cases the patients are operated upon in the late incurable stages. Finally, I would say operate in all cases of cancer of the stomach; operate early and, if unable to make a diagnosis, operate to make it.

"What Do the Newer Methods of Treatment Offer the Patient with Malignant Disease of the Uterus?" Dr. John G. Clark: Within recent years we have witnessed in the newer issues in the cancer problem the complete departure of gynecologists from vaginal hysterectomy to the abdominal method of removal of carcinomatous uteri. Up to three years ago German literature was replete with reports of results from these more radical procedures. Instead of limiting the pan-hysterectomy to those cases in which the cervix alone was involved, it was extended to even the most advanced cases in which the glands were involved. From this radical standpoint a recession soon set in; the small percentage of ultimate recurrences did not offset the high primary mortality and the wretched postoperative sequellæ.

Within the last few years a wave of enthusiasm for radium in the treatment of cancer swept over France and Germany and to a lesser degree conservative England, and from the literature the inevitable conclusion is drawn that radium offers excellent possibilities in the treatment of superficial growths and for the relief of hemorrhage and malodorous discharge in extensive cases, but that no extreme degree of optimism can be gathered from these reports since they all point to the fact that the deeper metastases are not reached by the radium, upon which hangs the fate of the patient. Five years ago I reached the conclusion that, when the deeper iliac glands are the seat of metastases, attempt to cure these patients is futile. Thus far we must conclude that there is not sufficient evidence to justify the substitution of radium for surgical measures in cases which are operable. As a forerunner to, and a follower up of, an operation, it is unquestionably advisable. In inoperable cases it should be invariably tried, for apparent cures have occurred in some very advanced cases, and in those cases not ultimately cured there is a decided ameliemation of symptoms. The occasional production of necrosis need not deter one from the use of radium as this occurs in the advanced cases.

Perhaps the best report upon the treatment of cancer by the *x*-ray comes from Professor Bumm of Berlin who is inclined to predict that this agent will supersede radium. Bumm has endeavored to perfect a method of treatment by the *x*-rays, eliminating serious burns of normal tissue. With the use of the newer tubes he suggests the possibility of application without vaginal treatment. From his experiments he believes that many cases of hitherto unfavorable deep-seated growths may be offered hope of cure.

In chemotherapy thus far, no measure has proved of real value in the treatment of cancer. The treatment of the disease by cancer extracts and by the various sera has proved to be worse than valueless. Percy of Galesburg is an ardent advocate of the use of desiccating heat for the cure of inoperable carcinoma. He uses a cold cautery at a comparatively low degree of heat for a sufficient length of time to destroy superficial and deep-seated growths. I believe the majority of surgeons in the United States, attempting to use this method, assume that he employs a cauterizing heat. Against this use of his cautery he protests very strongly and prefers to speak of it as a "cold cautery." I believe the method holds out definite promise of favorable results if Percy's rules are accurately followed. I feel, however, that radium offers equally good chances for cure without the greater danger of mortality incident to this operation.

From this review of the newer therapeutic methods in the treatment of cancer we may conclude that definite progress has been marked but that, as yet, a universal panacea in the treatment of cancer has not been discovered or even forecast by the most optimistic champions of the methods here mentioned.

"Gross Pathology and Malignant Disease." Dr. C. B. Longenecker: In considering the broad subject of gross pathology of malignant disease I shall limit my remarks mainly to cancer of the mammary gland. Some tumors of the breast are undeniably benign, but others are malignant from the beginning. There is, moreover, no guarantee that the benign tumors will so remain; certain types of cysts and the scars of a chronic mastitis are especially liable to take on malignant change under the influence of irritation and age. It is the part of prudence to regard all growths with suspicion and to do early radical operation in the majority of cases. With this thought in mind we will examine a few breast lesions as they appear externally and then as they really exist in cut sections of the breast. In the sections shown the diagnosis was confirmed by microscope. The so-called, precancerous conditions are in reality often cancerous from the beginning. In the two cases here shown, death occurred later from cancer. When cancer of the breast has advanced to such an extent that the typical signs are easily observed, it is approaching the final stage and should not be a subject for diagnosis.

Occasionally we see, sufficiently, cancer which, under the microscope, shows the beginning of the breaking through of the basement membrane and proliferation of epithelial cells. This may be coincident with a small palpable lump in the breast which upon section shows unmistakable evidence of early malignancy in the milk glands. When the case is sufficiently far advanced the microscopic section shows the general infiltration of the surrounding tissue and of the deeper structures; one small lump of the breast shows the beginning breaking through of the capsule and general disarrangement of the cell formation around the ducts, likewise a collection of cells occupying a position deeper down in the pectoral muscle, while the only thing palpable is a small lump in the breast. A patient who showed a not very large involvement of the breast with slight retraction of the nipple, showed, on section, a general involvement of almost the entire breast, the malignant disease occupying about half of the gland. One patient discovering a lump in the breast two years ago consulted a physician who advised waiting for two months "to see what would happen." Instead of going back to him the patient consulted a second physician who gave the same advice. She failed to return to him. Later she appeared at one of the hospitals, where operation was advised. She took this under consideration for a few weeks but did not report. She applied at another hospital, receiving the same advice. She said she would think about it for a few days and she never returned. The lack of judgment of the physicians and the procrastination of the patient are obvious.

In a case of Paget's disease which had once been cured by *x*-ray, upon return of the trouble the breast was removed and, on section, showed a wide involvement of the underlying structure. As a matter of fact Paget's disease is simply an outward manifestation of a well-established deeper cancer. Another patient with a small palpable lump, on section showed a discrete lump considerably removed from the nipple and quite a definite involvement of portion of the breast between the lump and the nipple. One patient coming for advice with considerable involvement of the breast refused operation for six months in which time the breast had very markedly degenerated. Operation was done to remove the widely involved breast. In three months the patient returned with wide involvement of the other breast. A very large breast in which the pathology started probably as Paget's disease showed almost the entire breast a consolidated mass involving not only the breast structure but the pectoral muscle as well. Recurrence rapidly followed in the opposite breast which at the death of the patient had become almost as large as the first breast.

Upon removal a tumor of the shoulder showed sarcoma. Within a few weeks a second growth was noted in the breast. A portion of the breast containing the lump was removed; recurrence in the breast followed in a few weeks and likewise a large recurrence followed removal of the growth on the shoulder. The second growth on the shoulder attained within a few weeks a size of about six by four inches. Under massive doses of *x*-ray there was entire disappearance within three weeks.

An advanced case of cancer of the face was shown in which there was a perfect dissection of the bones of the face, revealing the frontal sinus, the nasal sinus, the antrum, the roof of the mouth and orbit as perfectly as though dissection had been made by the knife.

Elmer H. Funk, Reporter.

WARREN—June.

The Warren County Society met at the Elks' Club in Warren, June 15, the nineteen members present being the guests of Drs. Finlayson and Smith. The time was filled by members extemporaneously presenting unusual cases.

Dr. W. M. Robertson reported a uniform improvement in several cases of erysipelas following the use of small doses of bacterial derivatives given intravenously. One case of facial erysipelas improved rapidly following this treatment, but a few days after discontinuance the disease reappeared, but on the opposite side of the face. Further use of bacterial derivatives was followed by complete recovery.

Dr. H. W. Mitchell reviewed the paper of Dr. August Hoch of the Psychiatric Institute, Ward's Island, N. Y., which was recently read at the hospital conference at Gowanda, N. Y. The subject was arteriosclerotic dementia illustrated with cases and checked by autopsy findings. The subjects showed distinct forms of cerebral deterioration due to arteriosclerosis of different types and distribution. After discussing the cases of dementia with well-marked focal lesions, he discussed a type of cases which was frequently seen and which showed pronounced deterioration and often late epileptiform convulsions. Such cases usually show definite cortical sclerosis of the finer blood vessels, with no marked focal degeneration. Convulsions seem frequently to accompany this type of deterioration. Syphilitic disease of the cortical blood vessels is often shown by the puckered or cauliflower appearance of the cortex. Often the sclerosis seems to be confined to the medullary vessels of the white substance. When the disease was located in the posterior lobes of the brain, deterioration was pronounced and often accompanied by aphasic trouble. The speaker cited personal cases illustrating the theme.

In the discussion Dr. John C. Russell outlined four cases of atypical and transient aphasia that he had seen during his many years of practice.

Dr. Keller reported two cases of scarlatina in which the circumoral paller existed for several months following the sickness on exposure of the children to cold. He considered this vasomotor condition following scarlatina as of some value in clearing up the diagnosis of light or doubtful cases.

I. A. Darling.

WESTMORELAND—May, June.

The banquet of the Westmoreland County Society was held at the New Zimmerman House, May 13, with over four score of the members of the society, guests from adjoining counties and ladies present. Room and table decorations, menu and service all deserved the freely favorable comment given them. Dr. C. E. Snyder, mayor of the municipality, introduced the toastmaster, Dr. W. J. Walker, who cleverly led the program. Toasts were responded to by Drs. Jean C. Bailey and W. H. Taylor. Drs. Beach, Milligan and Hawkins of the Allegheny County Society, and Dr. Nason, the councilor for the district, each contributed to the evening's program, which also included readings by Mrs. Robert J. Hunter and music by Miss Agnes Miller and others.

The county society enjoyed a combination literary and logical treat at the meeting at Greensburg, June 1.

Dr. C. C. Mechling of Pittsburgh delivered a pleasantly combined paper and talk on "Rectal Diseases." He thoroughly impressed his hearers with the absolute necessity of actual examination in this class of cases, cleverly mixing truisms and instances in a way to drive in the dominant theme of his paper.

Dr. J. Q. Lemmon read a paper on "'Siamese Twins,' or the Social Octopus, Syphilis and Gonorrhea." The society requested Dr. Lemmon to abstract certain portions of his paper for publication in several of the county newspapers.

D. ALLISON WALKER, Reporter.

YORK—JULY.

The York County Society met in the parlor of the Colonial Hotel, July 1, at 1 P.M., Dr. Shatto presiding. Forty members were present despite the intense heat, thus keeping the yearly average attendance above fifty, or over fifty per cent.

Dr. Roland Jessop read a paper on "Intestinal Obstruction" and the subject of "Intestinal Stasis" was treated by Dr. J. Nelson Dunnick. Both papers were of extremely high standard. The discussion was most instructive and the speakers were warmly congratulated.

A communication was read from Dr. J. Frank Small inviting the members of the society to convene the September meeting of the society at Pinehurst, his summer home, stating that all cars would be met by auto from 10 A.M., and that lunch would be served until 12:30. The doctor also planned a panoramic photograph of the members present as a souvenir commemorating his retirement from practice after twenty-five years of activity, and also his fiftieth birthday. The invitation was unanimously accepted with prolonged applause, and our genial member was promised a large turnout.

A communication from the Visiting Nurse Association asking for the society's endorsement of the Rules and Regulations by which their nurses were governed in their initial attendance upon the sick, was referred to the Committee on Health and Public Instruction.

The society adjourned to meet in the Old Postoffice Building, which is the prospective permanent meeting place of the society, and after a careful inspection, the society finally adjourned and continued the Committee on Permanent Place of Meeting and Library.

JULIUS H. COMROE, Reporter.

NECROLOGY.

IN MEMORIAM—THOMAS ELLIOTT, M.D.,

(Resolution adopted by the Mercer County Medical Society, May 13, 1915.)

Whereas, God, in His all wise providence, has seen best to remove from us one of His followers,

Resolved, That we do bow in humble submission to the will of Him who doeth all things well.

Dr. Thomas Elliott, was born in Fayetteville, Lawrence County, March 1, 1850, and died at Sharon, February 28, 1915, of septicemia resulting from a wound received while operating a few days previously. He attended country school, West Minster College and was graduated from Jefferson Medical College in 1877. He began the practice of medicine in the village of Greenfield, Mercer County, that same year. It was while going in and out in this rural community, that a mind naturally endowed with ability and resourcefulness, ripened and beckoned him on to that position of usefulness which in after life he so ably filled.

His was a simple nature, with kindliness of heart and a sincere love for his fellow men. From 1892 for three years he did postgraduate work in Philadelphia, Johns Hopkins University, Berlin and Vienna. In 1895 he located in Sharon and soon was recognized as one of the foremost surgeons in Western Pennsylvania. For some time he was connected with Buhl Hospital and about 1905 established a private hospital. The amount of work he did both in his own hospital and throughout Western Pennsylvania and Eastern Ohio was prodigious.

His philosophy was of the Ben Franklin type, mirth-provoking and not soon forgotten; neither was his earnest advocacy of any cause dear to his heart ever slighted.

As an expert witness and psychologist he had few peers and was a familiar figure in the courts of this and adjoining counties.

In our society he was always active and never shirked his duties. As a friend and counselor he was sincere and true, and many will remember the acts of kindness and Christian charity which he did with no thought of reward.

We miss him as a friend, as a fellow practician and as a man. Our condolence is hereby extended to his bereaved family and mourning friends.

C. W. MCELHANEY.
R. M. HOPE.
F. H. MITCHELL.

IN MEMORIAM—JOSEPH S. GIBB, M.D.

In the death on November 7, 1914, of Dr. Joseph S. Gibb, the Faculty of the Philadelphia Polyclinic and College for Graduates in Medicine lost, not only one of its distinguished colleagues, but a sincere friend and well-wisher who had given largely of his time, experience and skill for its service, and it is fitting that recognition of his work should be made a matter of record in the minutes of the faculty.

Dr. Joseph Scribner Gibb was born in Philadelphia in 1859 and received his preliminary education at the well-known Eastburn Academy of this city. Graduating from the Medical Department of the University of Pennsylvania in 1880, he entered upon the general practice of medicine in the northern part of the city, after having served an appointment as resident physician in the Philadelphia General Hospital, or Blockley as it was then called. Dr. Gibb was for some time one of the police surgeons and also outdoor physician to the Board of Health, and began the study of his specialty of the ear, nose and throat in the service of our colleague, Dr.

Arthur W. Watson, in the Polyclinic, first as a student and then in 1885 as clinical assistant. He soon became adjunct professor and then professor of diseases of the nose and throat. On March 14, 1912, owing to continued ill health, he resigned his active work and was, by action of the faculty, confirmed by the Board of Trustees, placed on the emeritus list, thus terminating an active connection of seventeen years with the Polyclinic. At the same time and for the same reason, Dr. Gibb resigned his position as laryngologist and otologist to the Episcopal Hospital, which he had held for many years. At the time of his death he held a similar position in the Girard College, the last of his hospital connections.

An able and active writer in his younger days, Dr. Gibb attained a national reputation and was a familiar figure at the meetings of the local and national scientific societies in which he held membership. Among the most important of these, besides the county and state medical societies and the American Medical Association, were his fellowships in the College of Physicians of Philadelphia, the American Laryngological Society and the American Laryngological, Rhinological and Otological Society. In 1908 and 1909 he was chairman of the Section on Otology and Laryngology of the College of Physicians.

Dr. Gibb was an accurate diagnostician and a skillful operator. His open, frank, kindly and genial disposition toward his colleagues and his gentleness to his patients made him universally liked and respected.

It is with sincere sorrow and appreciation of its loss that this minute is made a matter of record in the proceedings of the Faculty.

J. Montgomery Baldy,
James K. Young,
George M. Coates, Chairman of Committee.

IN MEMORIAM WILLIAM WRIGHT HEATON, M. D.

Dr. William Wright Heaton of Saltillo, Huntingdon County, son of George A., and Sarah Ann (Wright) Heaton, was born at Coalmont, this county, January 1, 1865, and died in the J. C. Blair Memorial Hospital, Huntingdon, May 27, 1915. His death was due to an infection from the examination of a woman with septicemia

Dr. Heaton was educated in the public schools of Coalmont and Cassville. He began the study of medicine in 1887 under Dr. G. W. Simpson of Mill Creek. He spent one year at the College of Physicians at Baltimore and then went to the University of Louisville where he was graduated in 1890. He practiced in the west for a short time and later took a postgraduate course at the Jefferson Medical College from which he graduated in 1892. He then located at Entriken, Huntingdon County, and remained there two years; he then located at Saltillo where he practiced his profession until his death.

He was a member of the Huntingdon County Medical Society, and the Medical Society of the State of Pennsylvania. He was also a member of Cromwell Lodge, No. 572, F. and M., of Orbisonia.

He was unmarried but leaves to mourn his death an aged mother, a sister and a brother, Dr. N. C. Heaton of Mauch Chunk.

Dr. Heaton enjoyed the esteem and confidence of the people in the community in which he lived; he was genial and companionable and was always ready to respond to the call of distress of poor suffering humanity, his death being due to a virulent infection received while endeavoring to relieve a distressed human being. We have an example of a hero who came to his death by attending his duty. We therefore, as physicians, should emulate the virtues of such a man, and while forcibly reminded by his death that we are connected with a profession fraught with dangers, let us be willing to take the risk and work on faithfully and well.

This society has lost a valuable member, the profession a real and unselfish physician, and the community a courteous, sympathetic and self-sacrificing man. Therefore be it

Resolved, That the Huntingdon County Medical Society tender their deep sympathy to the family of Dr. Heaton in their great loss and express the hope that they may see some brightness through the dark clouds by the thought of having had such a noble and unselfish son and brother.

R. R. Decker.
C. A. R. McClain.
H. C. Frontz.

IN MEMORIAM—AARON S. MILLER, M.D.

(At a meeting of the Lehigh County Medical Society. held January 12, 1915, the following resolutions were adopted.)

Whereas, In the death of Aaron S. Miller of Saegersville, the medical fraternity loses one of its valuable members; and especially so the Lehigh County Medical Society, with whom the deceased was associated, and

Whereas, His kindly nature, sociability, courteous manner, high moral character and self-confidence were an inspiration to us all; therefore be it

Resolved, That we hereby express our appreciation of his faithfulness and efficiency as a physician, and the honorable and professional manner in which he always performed the duties of his high calling. We also record our appreciation of his character as a man, a citizen and a dear friend.

Resolved, That we tender to his wife and children our sincerest sympathy in their bereavement, and be it further

Resolved, That these resolutions be spread upon the minutes of the society; that a copy be sent to the bereaved family; that a copy be sent to two of the Allentown daily papers to be published, and in the Journal.

Fred C. Seiberling.
E. H. Dickenshied.
Frederick R. Bausch.

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ORIGINAL ARTICLES.

ADVENTURES ON THE HIGHWAYS AND BYWAYS OF MEDICAL RESEARCH.

BY JOSEPH MC FARLAND, M.D., SC.D.,
Philadelphia.

It has been said by some in surprise, by others in ignorance, and by still others in malice, that as soon as the doctors begin to study any disease, it straightway becomes more frequent and more severe. In many cases this is undoubtedly true as far as superficial observation goes, but it is never true in the sense applied by those who say it with malice.

Recent medical activity with reference to one disease, that is to be discussed, has been followed by its almost complete eradication from some of its chief strongholds, and by universally diminished prevalence; with reference to another it has resulted in an enormous apparent increase and prevalence of the disease. Both of these circumstances will be explained.

The adventures to be related in this paper have to do with the explanation of diseases that are caused by protozoa, or minute animals, about which people generally are much less familiar than they are with those caused by bacteria or minute plants.

The first is malarial fever. It is the best known and also one of the longest known diseases. The earliest medical writers were familiar with it, and it is quite safe to say that the physicians of the civilized world have known it quite well for several thousand years. In marked contrast is the other, a less common but much more dangerous disease, that has been known for only about one hundred years, the African lethargy, or sleeping sickness. The curious thing about these two diseases is that though the one has been known for thousands of years, and the other for only decades of years, just as much is known to-day about the one as about the other. The reason is very simple: it is only about twenty-five years since a new method of investigation was applied to both and showed that the opinions about malarial fever were all wrong and indicated the way to the truth. This new method was the experimental method by which opinions were set aside for facts, and the facts proved.

During all of the centuries that physicians studied malarial fever, their sole means of knowledge was the patients, and beyond them they could not go. It is true that much can be learned by these means, and much was learned. Thus, up to the period when medical investigation ceased to be purely observational and speculative and became experimental, the following facts concerning malarial fever were known: (1) It was a fever with regularly occurring attacks of chill, fever and sweat. But doctors were continually perplexed to find it regular and irregular in the occurrence of these attacks and inevitably confused it with other febrile diseases. There was no way to be certain what was and what was not malarial fever. (2) It had its home in marshy districts and its name "malaria," which means "bad air," expresses the opinion that prevailed for more than a thousand years, that it was caused by noxious effluvia, or poisonous vapors, that arose from the decaying vegetation of marshes. But there was always more or less perplexity about its sometimes occurring where there were no marshes and therefore no poisonous vapors. This had to be explained and grotesque perversions of the idea arose, as, for instance, that sufficient of the poisonous vapor might arise from a gutter, a water tank or a sewer, to cause the disease, when inhaled in concentrated form. (3) It commonly followed exposure to the evening air, hence the vapors were supposed to arise and diffuse themselves at night. (4) The danger was overcome by altitude and those were exempt who lived on hills or among the mountains, though marshes were near-by. (5) It could be cured by Jesuit's bark or the medicines, cinchona or quinin, made from it, but here there was the greatest confusion of all because only the typical cases of chill, fever and sweat were so benefited, and in many other cases the patients obstinately refused to be benefited by the remedy at all.

Here knowledge rested, and no progress was made until the year 1880, when Dr. Alphonse Laveran, engaged in the study of malarial fever in Algeria, happening to examine the blood of some of his patients with the microscope, observed in the red corpuscles, small motile bodies that he recognized as parasites, which he came to look upon the cause of the disease, and to which he gave the name *Plasmodium malariae.*

The observation, being published, at once appealed to every scientific physician as of vast importance, and all over the world drops of blood taken from the fingers of their patients were subjected to careful examination by doctors. It may almost be safely said that the systematic study of blood for assistance in learning what is the matter with the sick patients began with this discovery by Laveran. It took a long time to prove the case, for many different things were found by these examinations. Only one thing was sure after two or three years, that was, that nothing resembling the parasites discovered by Laveran were ever found except in persons suffering from malarial fever, and then, only in those suffering from the typical forms of the disease. The Italians were the most industrious investigators of the parasites, and by 1885, Golgi, one of them, had succeeded in putting together almost all of the peculiar and diversified parasitic bodies, so as to show them to be the different stages of the development of the same little animals. He was the first to describe what is known as the schizogony, the schizogonic cycle, or the human cycle, of the development of the plasmodium. The little body grows to maturity, divides into a varying number of segments, each of which grows up and divides, and so each time the cycle is completed, there is still a chill, fever and sweat, and, through the simultaneous division of the parasites, many times their number occur. With this clue to work upon, it was then possible to find out that there were several different species of the little parasites, requiring different periods of time in which to grow to maturity, and to identify these different species of the parasites with the different clinical types of the disease, one type having the chill, fever and sweat every forty-eight hours, another every seventy-two hours.

It also became possible to establish a new criterion for diagnosing, *i. e.*, recognizing, the disease. It was no longer merely a matter of looking at the patient; it became a matter of finding the parasites in his blood. If they were there, it was malarial fever, if they were not there, it was probably something else. However, all this had nothing to do either with preventing the disease or curing it, and the only way in which the conception of the nature of the disease was modified, was by making it clear that the disease was not caused by the poisonous vapors as such, but by the parasites that were probably inhaled with them.

But this conception was so inconsistent with the general facts of parasitology that Sir Patrick Manson devoted himself to its study. He could find no means by which the parasites ever left the blood of the patient or escaped from his body, no matter how carefully he studied his patients, so he came to the conclusion that the plasmodium must be taken out of the blood of the patient by a biting insect, probably a mosquito. This thought was based upon one of his former discoveries, that a small worm, the filarial worm, whose embryos sometimes live in the blood, is taken out of the blood by a mosquito, and some time afterward transferred to another person when bitten by the mosquito.

Impressed with this idea, he discussed the matter with Major (now Sir) Ronald Ross who was about to leave England for India, and advised him to endeavor to discover the facts of the case. Between 1890 and 1895 Ross worked on this problem with great earnestness, adopting the new experimental method of research. If he had been obliged to confine his experiments to human beings, it is far from certain that he would have succeeded so well or so soon, and it is certain that many healthy people would have been given malarial fever. But Ross found that there was a malarial parasite of little birds, sparrows, canaries, etc., and worked with it and them. After many painstaking endeavors, most of which turned out to be heartrending disappointments, Ross, with a perseverance that was almost superhuman, came to the conclusion that he was, perhaps, not working with the right kind of mosquitoes. He therefore tried others and still others, and finally his efforts were crowned with success for he found that when certain mosquitoes (Anopheles), bred from the egg in the laboratory, were allowed to feed upon his birds with malarial parasites in their blood, the parasites taken up by the mosquitoes passed through a new series of developmental changes, a new cycle, known as sporogony, or the sporogenic cycle, which ends in the appearance of minute spores of the parasite in the salivary glands of the mosquito. When such sick and therefore infective mosquitoes were permitted to bite healthy birds, the birds developed malarial fever and the parasites appeared in the blood. When this was finally tried upon man, the same thing was found to be true. Anopheles mosquitoes, fed upon human blood containing the plasmodium, were found to become infected by the parasites they took into their bodies with the human blood and later to transfer the spores of these parasites to other human beings whom they subsequently happened to bite.

This was a discovery of surpassing magnitude. It cost the lives of many mosquitoes, and it cost disease and suffering to many little birds, but see what came of it. It at once became clear that malarial fever was not due to the inhalation of the miasms of swamps, but to parasites put into our bodies by sick mosquitoes. If one could protect himself from the mosquitoes he might escape malarial fever. This was quickly tested by Drs. Sambon and Low, who selected for the purpose the most pestilential spot in the most notoriously malarial district of the Roman marshes and lived there for three months in a mosquito-proof hut, going inside before the Anopheles mosquitoes began to fly in the evening and staying in until the mosquitoes disappeared in the morning, using no other precautions and escaping malarial fever, though it was the most dangerous time of the year. Finally, some mosquitoes were allowed to bite patients suffering from malarial fever in Italy, and then were taken to England where no malarial fever was, and allowed to bite Dr. B. T. Manson and Mr. George Warren, who after a period of incubation, both suffered from typical chills, fever and sweats.

It was with this important knowledge to work upon that our own United States Army Medical Commission, consisting of Drs. Reed, Carroll, Lazear and Agramonte, entered upon the studies that led to the discovery that yellow fever is similarly spread from man to man by mosquitoes. Lastly, it was with all this information in his hands, and by waging his campaigns solely against the mosquitoes, that Major (now Surgeon General) W. C. Gorgas, exterminated yellow fever from its stronghold in Havana, Cuba, and by a similar campaign, directed solely against mosquitoes, exterminated yellow fever and almost eradicated malarial fever from the Canal Zone and made the building of the Panama Canal possible. It has, therefore, come about that through the experimental study of malarial fever, its cause and means of prevention were found out and the number of cases diminished.

From this somewhat lengthy but essential introduction it is now possible to proceed to the second of the adventures, and consider another protozoan disease, the "sleeping sickness."

It is quite probable that isolated observations were made, and perhaps published from time to time before the work about to be mentioned was written, and it is quite certain that imported African slaves, brought from the Dark Continent to this country in the early days of the slave trade, occasionally died in an unaccountable state of lethargy. But sleeping sickness was not known as a distinct and well-characterized affection until Dr. Winterbottom went to Africa in 1798, and, returning, wrote his book, "An Account of Native Africans in the Neighborhood of Sierra Leone," in 1803.

This was the beginning of knowledge on the subject and marks the appearance of sleeping sickness in works on medicine. Notwithstanding these one hundred fifteen years during which the disease was known and in spite of the symptoms of the disease being so distinct as to make it impossible to mistake it, it continued to be a kind of medical curiosity concerning which nothing was found out, and about which only occasional writings appeared, until 1900.

We can thus date the beginning of scientific knowledge (scientific is here used to mean experimental and parasitological knowledge, as contrasted with clinical and observational knowledge) with great accuracy and find that the period is exactly fifteen years.

To account for the difference between what has taken place in these last fifteen years and what happened in the preceding ninety years, we must remember what has taken place in equatorial Africa, and also what has taken place in the way of improving the methods of medical research.

During the last fifty years the "opening up of Africa" has been accomplished. The continent was explored by Livingstone, Stanley and others; European nations preëmpted tracts of it and began its colonization; commerce, mines, agriculture, missionary enterprises, hunting parties, etc., invaded it; its peoples were brought into touch with one another and with white men; many Europeans went to live there, and having made or lost their fortunes or their health, returned again to their homes. In the European countries the dawn of the experimental period of medical investigation was being followed by the scientific illumination of obscure medical problems of all kinds. Rare imported diseases were studied in Europe, when brought from foreign lands, and so it happened that medical men with inquiring minds, eager for new fields to conquer, sought the rich harvests promised by the returning pilgrims from Africa.

In 1900 Manson and Mott studied, with great interest, two cases of sleeping sickness in which the patients returned from the Congo to die in the Charing Cross Hospital in London. They were, however, mistaken in their interpretation of what they found, so that it is not necessary to mention it, but their researches increased interest in the study of the disease.

In May, 1901, Dr. Forde received in the hospital at Bathurst in Gambia, Africa, a man who for six years had been the captain of a steamboat on Gambia River. The man, a European, had an obscure fever that was, at first, thought to be malarial fever, but when the test, now recognized as the final one in the diagnosis of malarial fever, the examination of the blood for the malarial parasites, was made, no malarial parasites were found, but instead a small, actively motile "worm-like" body was found. It was clear that the case was not malarial fever, but what it was, and what this "worm-like" body was, Dr. Forde did not know. He did know that nothing of the kind had been found in human blood before.

In December, of the same year, Dr. Dutton saw this same patient with Dr. Forde, and, with greater experience in blood parasites, Dutton identified the "worm-like" bodies as trypanosomes, protozoan parasites well-known among the lower animals, but not previously known to occur in man. These parasites are peculiar, little, actively motile, spindle-shaped a red corpuscle, and are now called *Trypano-* animals, in length three times the diameter of *soma gambiense.*

In the next year, 1902, Dutton and Todd found similar bodies in the blood of other human beings, and were then led to examine blood from 1000 persons living in Gambia. They found the parasites in seven cases. Manson also found trypanosomes in the blood of two persons that returned home after having lived some time on the Congo.

In 1903 Brumpt found the same bodies in the blood of a ship's steward at Boumba, at the junction of the Ruby and Congo Rivers, and in the same year Baker observed them in the blood of three patients in Entebbi in Uganda, and Maxwell-Adams pointed out that the patients in whose blood the parasites were present, showed "puffiness of the lower eyelids and face, were irritable and apathetic and had altered voices like patients in the early stages of sleeping sickness." Further, in the same year, Castellani, who was studying sleeping sickness in Entebbi in Uganda, wrote to the Royal Society of London that, in a case of sleeping sickness, he had found trypanosomes in the cerebrospinal fluid, the clear watery fluid that bathes the brain and spinal cord and fills their cavities.

This important contribution was the foundation of a careful investigation made by Bruce and Nabarro, who introduced a hollow needle into the spinal canals of patients in a great many cases of sleeping sickness, and found the parasites in thirty-eight. The cerebrospinal fluid of well people never contained any. After considerable controversy, into the details of which it is not necessary to go, it became generally admitted that the parasites found in the blood and those found in the cerebrospinal fluid were the same, and that they were indisputably associated with sleeping sickness and no other disease. Also that they only appeared in the blood for a comparatively short time at the beginning of the disease, after which they disappeared but remained in the cerebrospinal fluid to the end.

In the meantime data were being collected in regard to the geographical distribution of sleeping sickness and its prevalence throughout the continent. The results were very surprising for they showed what had never been imagined; that is, that the disease was prevalent throughout a great part of equatorial Africa, and that vast numbers of the native population were suffering from it. In some places it was so prevalent that the population of native villages was decimated, and in a few places it actually threatened the native peoples with extermination. A conservative estimate indicates that several millions of people must have died of the disease since it was first described by Dr. Winterbottom, and that nearly half a million natives of Africa are suffering from it at present, the great majority of whom may die.

It is therefore, no wonder that such investigators as had opportunity to do so continued the study of the disease with the welcome addition of the knowledge of this parasite to work upon.

It will also be clear to all that at the time now under consideration, 1905, knowledge of the sleeping sickness was about equivalent to the knowledge of malarial fever in 1890, when Ross began his work.

To continue the scientific study of sleeping sickness, it then became necessary to determine that the trypanosomes, found in the blood in the early stages and in the cerebrospinal fluid in the later stages, were the actual cause of the disease. There was only one way to find out this, namely, to introduce the trypanosomes into lower animals and see whether they developed sleeping sickness. A large number of different animals were inoculated, and the results, which were of great interest, have shown that the trypanosome is infective for a great variety of them, though it is only in those animals that resemble human beings (chimpanzees, apes and monkeys) that typical sleeping sickness is produced. The names of Bruce, Nabarro, Greig, Thomas, Linton, Breinl, Grey, Tulloch, Dutton, Brumpt, Wurtz and Castellani are associated with this phase of the investigation.

While Ross was working out the life history of the malarial parasite in the mosquito in India, Dr. David Bruce in Africa was studying the "tsetse-fly disease" that destroyed all the imported domestic animals in certain parts of the continent. This disease, familiar to readers of the early African explorations of Livingstone and Stanley, is caused by the bites of the tsetse flies. David Livingstone had carefully studied the effects of the fly bites upon animals and noted their subsequent illness, but he thought that the flies introduced some poison by which the animals were injured.

In 1895, Bruce found that the blood of animals suffering from "tsetse-fly" disease contained a trypanosome, which Plimer and Bradford in 1899 called, in honor of its discoverer, *Trypanosoma brucci*. Bruce showed that it was this living organism, this minute parasite, the trypanosome, that was introduced by the biting flies and caused the illness.

Now it must be clear to all, that as soon as it was discovered that sleeping sickness was caused by a trypanosome, a suspicion was aroused that the disease was caused by the bite of the tsetse fly. Naturally they first incriminated the common tsetse fly (*Glossina morsitans*) that infects the cattle, but its geographical distribution did not conform to that of sleeping sickness. There are seventeen different species of tsetse flies, of which one, the *Glossina palpalis*, attacks man quite freely and has a geographical distribution corresponding to that of sleeping sickness. It required experiments upon animals to determine whether tsetse flies of this species bred in the laboratory, and therefore supposed to be well, *i. e.*, free of parasites, could, after being permitted to bite patients with the trypanosomes in the blood, or to bite animals with the parasites in their blood, cause sleeping sickness in monkeys by biting them. That this is true was found in 1903 by Bruce and Nabarro.

We have thus a chain of discoveries, in which the experimental method of investigation, and the employment of animals have always been of crucial importance, leading up to the final demonstration that sleeping sickness in man is caused by parasites that enter his body through the saliva of a biting fly. It may be interesting to know that it has more recently (1910) been found by Stephens and Fantham, that there is a second parasite of sleeping sickness, looking almost exactly like the other, but more rapidly fatal in its effects (*Trypanosoma rhodesiensi*) and that it is spread by another and in certain sections more common tsetse fly, *Glossina morsitans*.

While all of these studies were in progress, other investigators were at work along entirely different lines. Prof. Paul Ehrlich, in his laboratory at Frankfurt-on-the-Main, was industriously making experiments with medicinal anilin dyes and preparing synthetic, organic compounds of arsenic for medical use. The amount of pains and the labor that this entailed, can but be shown by the fact that one of these, the compound best known to both physician and layman, salvarsan, is No. 606 of the preparations of the series.

The purpose of this elaborate chemical research was quite definite in the mind of the investigator. Arsenic is a powerful poison, but so destructive to life that in its usual form it has but little opportunity to be of service in the treatment of disease.

Anilin is another poisonous substance, by itself of little service. By introducing these agents into compounds, in various proportions, might it not finally be possible to arrive at a combination that would fulfill the following extremely desirable requirements: (1) Not to be so poisonous as to injure the patient; (2) to be sufficiently poisonous to kill blood parasites; (3) to effect their destruction through the administration of a single dose? Such a result would at once transform the patient from a sick to a well man, by ridding him of the cause of the disease. Ehrlich called the desired effect *"therapia sterilisans magna."*

The production of these hundreds of synthetic compounds of arsenic must, in itself, have been a great work, but how much greater must have been the determination of the value of each with reference to the above-mentioned requirements? And how was this to be done? How could it be found out that some of these six hundred preparations were too poisonous ever to be of any use? How that others were not poisonous and therefore perhaps of no benefit because they could not destroy the protozoan parasites? The only answer is that they must be tried! But how, on whom! Naturally not on people; therefore on animals! It so happens that there is one of the trypanosomes, *Trypanosoma lewisi,* discovered by Lewis in 1877, that is almost entirely confined to rats so far as its infectivity and disease-producing power is concerned. The rat and its trypanosomes, therefore, seemed to afford the very best means of trying out the new remedies. Thousands of rats were no doubt employed and are still being employed in the investigation which is not even yet completed, and the first tests had to determine how much harm the remedy did the rats, in what dose it could be used without harm, and then whether in that dose it destroyed the trypanosomes in the induced infection in the rats. This was certainly hard on the rats but out of it have come drugs that are of immense benefit to mankind.

One of the preparations in Ehrlich's series had been made thirty years before by Bechamp, but was more carefully studied in 1896-97. It is known as atoxyl, and has an elaborate chemical formula C_6, H_4 (NH_2) As O OH, O Na) $+ x H_2$ O—C_6 H_7 O_3 N As Na $+ x H_2$ O. It is chemically and technically known as sodium aminophenyl arsenate. Its composition corresponds to sodium-dihydrogen arsenate in which one hydroxyl of the arsenic acid is replaced by a molecule of phenylamin (anilin.) It contains about twenty-six per cent. arsenic. This remedy, when tested upon rats, proved to be reasonably safe for the rats and intensely destructive for the trypanosomes. Two French investigators, Mesnil and Nicolle, began experimenting with atoxyl and achieved some success in the treatment of trypanosomiasis of rats. It was W. Thomas of Liverpool, however, that first used atoxyl in treating animals suffering from tsetse-fly disease and in the treatment of sleeping sickness, with a success that has made it, up to the present time, the most useful drug in our possession, and perhaps we should say the only drug that holds out the least hope of success.

As quinin in malaria will kill the parasites of that disease only when they are in the circulating blood, so in sleeping sickness, atoxyl will kill the trypanosomes only when they are in the blood; that is, when the patient is in the early stages of the disease and before they have invaded the cerebrospinal fluid.

But it was said in the opening of this paper that it sometimes happened that when a disease is being investigated, its incidence *i.e.*, the number of cases, appears greatly to increase. Such seems to be true with regard to sleeping sickness. Active investigation all over the Dark Continent has brought to light an immensely greater number of cases and an immensely wider geographical distribution than was previously supposed and has shown that the disease is rapidly spreading because of transportation, commerce, hunting and a variety of new conditions that disturb the biological equilibrium of the whole continent.

It was shown, in regard to malarial fever, that following the discovery of its cause and the means of infection, the means of preventing the disease were at hand and the changed conditions at Panama were cited as proofs.

What effect can our knowledge of the cause of sleeping sickness and its transmission by the tsetse flies have on its future frequence and occurrence? Can it be exterminated from the whole Dark Continent or from inhabited sections of it? These questions at once arose when the source and mode of transmission were explained, and it was hoped that the destruction of the flies, the prevention of further infection of flies by defending cases of the disease from them, and precautions similar to those used in combating malarial fever might accomplish the desired end.

Elaborate measures were set in motion but all hopes of success have, for the present, been cruelly dashed to pieces by the discovery of Stephens and Fanthan that man is not the only being that harbors the fatal parasites. They are common in many native antelopes, and the flies not only pass them along from man to man, but from antelope to man. It thus appears that one of the very first measures directed toward the eradication of the disease must be the sacrifice of all of the wild game in a great territory, an impossible undertaking at present. The breeding habits of the tsetse flies make it pratically impossible to get rid of them, so that more information, much to be secured through experiment upon animals, will be required before the disease can be eradicated. There is, therefore, every reason for pursuing the investigation of the subject with unabated interest and activity in the hope of finding a cure for the later stages of the disease, that stage in which the trypanosomes are in the cerebrospinal fluid and the disease no longer amenable to atoxyl, while we endeavor to find means of exterminating the flies and game.

In the meantime perhaps another million or so of poor sufferers, black and white, must pass through a period of fever of varying duration, enlargement of the lymph nodes, edema of the face and extremities, must become more and more drowsy, and finally fully conscious of the terrible and unavoidable end that awaits them, and of the impossibility of obtaining relief, fall into a more and more prolonged apathy and drowsiness before they finally close their eyes in that deep sleep from which there is no awakening.

A STUDY OF 848 CASES OF TONSILLECTOMY.

BY GILBERT D. MURRAY, M.D.,

Fellow of the American College of Surgeons; Fellow of the American Laryngological, Rhinological and Otological Society; In Charge of the Eye, Ear, Nose and Throat Department of the Moses Taylor Hospital, Scranton.

(Read before the Lackawanna County Medical Society, January 19, 1915.)

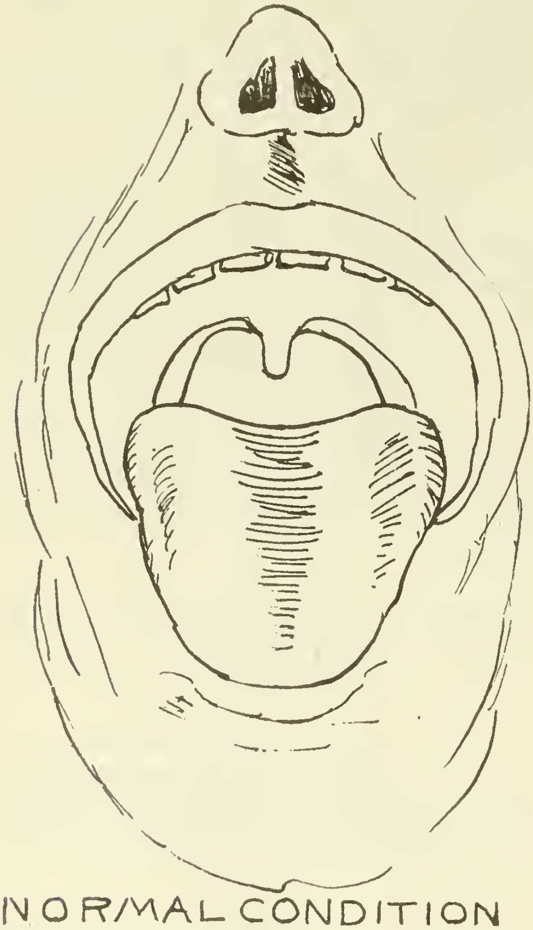
Tonsillectomy is a complete removal of the tonsil in the capsule and is a major surgical operation.

It is not within the province of this paper to enter into the anatomy and physiology of the tonsil, as it is a universally accepted fact that every organ is of essential value and service to the organism which contains it. Nor will there be time to discuss its relationship to other dis-cases such as rheumatism, endocarditis, chorea, tuberculosis, diphtheria, accessory sinuses, septic joints, gall-bladder disease, appendicitis, gastric ulcers, uremia, etc.

It has been my constant observation that where a tonsil is a focal infection and has been removed, the patient's power of resistance improves, and often affections remote thereto will disappear. Such as anemia, discharging ears, accessory sinuses of the nose, rheumatoid arthritis, enlarged glands of the neck, and indigestion.

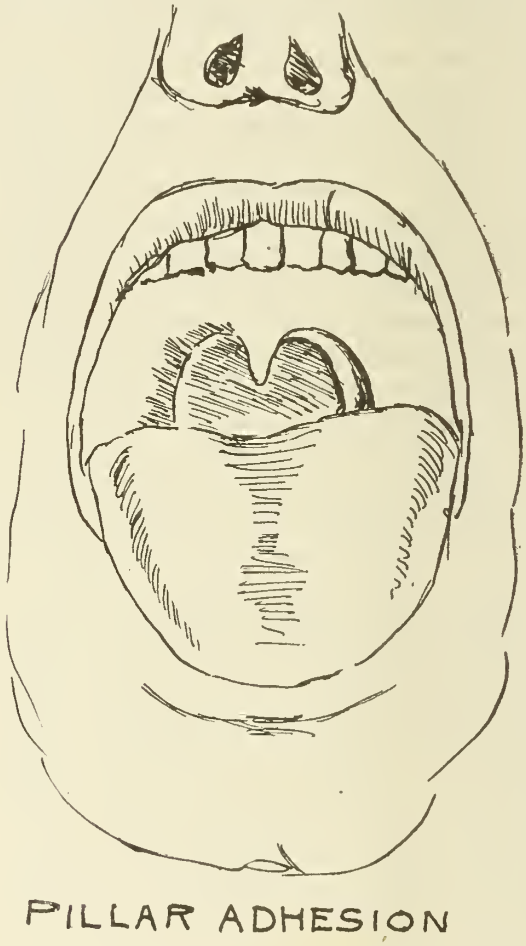
At a meeting of the American College of Surgeons this winter in Washington, Prof. Bradford of Harvard said that "if progress is to be made in surgery it is not by discussing some interesting case on the street with a colleague, but rather by reporting all cases with good and bad results." To apply this theory to tonsillectomy is more difficult than in general surgery for the reason that the patient usually leaves the hospital within a week, too soon for useful data to be obtained; whereas the general surgeon keeps his patient at the hospital under longer control. We were especially handicapped in getting our return reports, as many of the patients were foreign born with only a slight knowledge of English, and nomadic in character, many letters sent to them returning unopened.

The following history was taken on admittance: *Subjective,* age, sex, residence; whether frequent colds in the head; subject to tonsillitis, whether mouth breathers; running ears; restless sleep and snoring; appetite. *Objective,* note made as to whether anemic; condition of mouth; bad breath; enlarged cervical glands; coated tongue.



NORMAL CONDITION

Figure 1.



PILLAR ADHESION

Figure 2.

Immediately after each operation short account was dictated of the condition found; *viz.,* size; whether partially submerged or completely, or not submerged at all; whether diseased with necrotic, friable or tough tissue, or with cheesy masses, or cold abscesses; whether diffi-

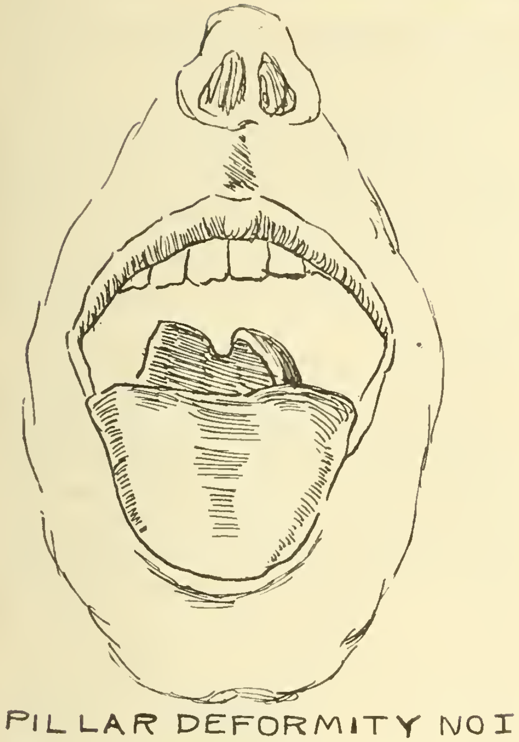


Figure 3. Injury to palatopharyngeus muscle.

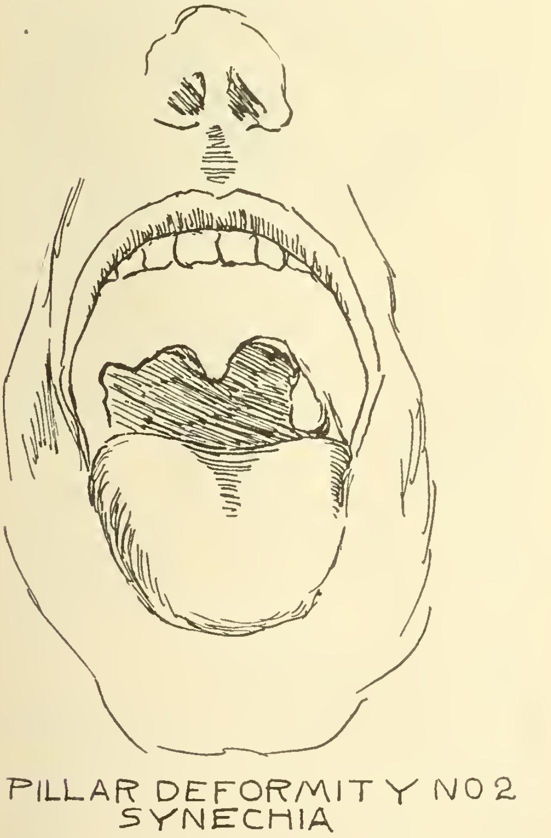


Figure 4. Cutting the palatopharyngeus muscle and adhesion to lateral wall of the pharynx, interfering with the functions of the eustachian tube, left side showing part of the tonsil not removed. Slight injury to the pillar.

cult of removal; hemorrhages; injury to pillars or uvula; adenoids, their size, character of tissue, whether friable, tough or necrotic, and their location.

Of the 848 csaes reported the first 248 were operated upon in 1911 and part in 1912, and only the preliminary history already described was taken. These have been eliminated from all statistical work. Of the 600 remaining cases we were able to receive end results from 405. Each patient was instructed to return to the hospital any time after three months to report and on failure to appear after that time a letter was sent to each with an enclosed postal on which they were asked to respond or to return to the hospital.

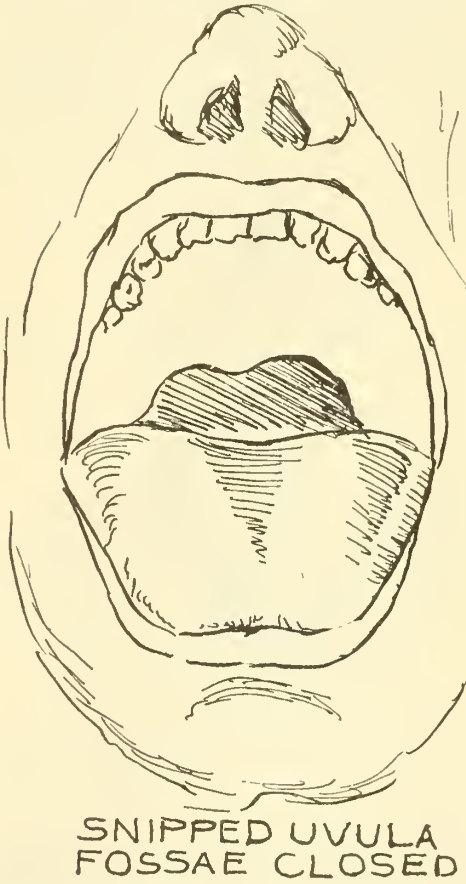


Figure 5. Pillar deformity entirely including fossæ.

In selecting cases the writer was governed largely by the following symptoms: Recurrent tonsillitis, frequent colds, mouth breathing, anemia, coated tongue and bad breath, enlarged cervical glands, pasty complexion, voice tire, hoarseness, and irregular eruption of the teeth.

Examination was done by the direct method as follows: If concealed by anterior pillar the latter should be pushed aside and pressure exerted against the tonsil. If infected, a quantity of liquid pus or cheesy matter will be expressed. It does not follow, however, that the tonsil is free from infection if this manifestation is not present, as the writer has had a large number of badly infected tonsils which gave no outward evidence of disease. Red pillars usually indicate trouble within, regardless of the size of the tonsil. In fact, some of the worst tonsils are so small that it is necessary to separate the pillars in order to find them. That kind is the most harmful to the individual.

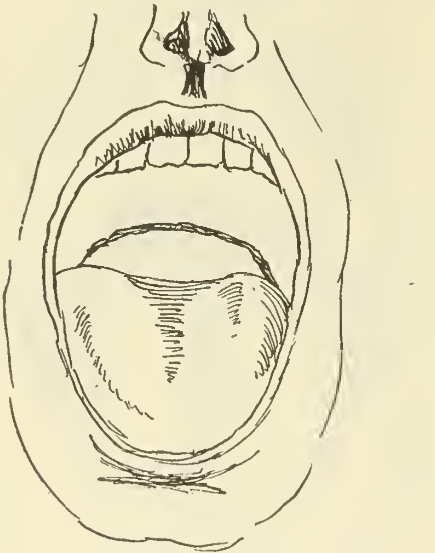


Figure 6. Deformity of the entire soft palate closing fossæ.

In children a frequent sign of chronic infection is multiple indurated cervical glands, bad breath and anemia, the kind of case in which we were taught to give syrupus ferri iodidi, and it is an inspiration afterwards to see in these cases the blood count doubled and that all evidence of the enlarged cervical glands has disappeared.

The presence of an adenoid may be determined by the finger, mirror or Holmes' nasopharyngoscope, and it is not so frequently subject to retention of purulent secretions as the tonsil.

The patients were told to report at the hospital in the morning without breakfast, and were prepared for the operation which was held in the afternoon. A urinary analysis was made in each case and the lungs and heart examined.

I was assisted by the regular hospital corps of house surgeons and nurses and used the following instruments: Whitehead's mouth gag, LaForce adenomatome, Davis' artery forceps, tenaculum and pillar elevator, Eve's tonsillectome snare and the author's long-handled needle.

The method of operation is as follows: Patient is given a minimum amount of ether so that he can still swallow and the anesthetic is discontinued. When the operation begins the patient is placed on back and a sand bag under the neck. One assistant holds the light about one foot above the mouth while the anesthetist stands ready to give more ether if the operation is delayed. The tonsil nearer the operator is first selected and involuted. It is very important at this stage to have a minimum amount of hemorrhage. To guard against this avoid trying to peel the tonsil around its edge or cutting the plica near the pillar. Such incisions as are made should be made as nearly as possible in the medium line. Involution should be done with two forceps, great care being taken that the posterior pillar is not pulled into the snare. Apply snare and constrict tightly and hold for a moment before severing. By this procedure hemorrhage from the fossæ is much lessened. After the tonsil is removed a pad of gauze is held tightly over the area a few minutes, then the pillars are elevated and a search made for spurting vessels, which if large enough are tied off; if small, simply twisted or allowed to remain for a few minutes on the forceps.

As some tonsils are very friable and some tough and resisting both in children and adults, it is necessary to exercise judgment in making traction or the grip will pull out, a very embarrassing accident. It is always safer to grab the tonsil well down.

After removing the adenoid hold pad against the soft palate. In this way the blood passes through the nose instead of the pharynx.

Hemorrhage in tonsillectomy is more troublesome when the pillar is accidently cut. The bleeding which takes place from the fauces is unavoidable. If, as sometimes happens, the vessels will break off, it is well to form a stitch loop around the pillars near the position of the artery which you can tie quickly and allow to remain over night. The control of hemorrhage after these methods is sure.

Out of the 600 cases we have had ninety-four hemorrhages; thirty-four were of sufficient seriousness to require ligation of the artery and the remaining sixty were stopped by ligature around the two pillars.

We have had one case of secondary adenoid hemorrhage which required plugging of the vault, the plug being through the nose.

Dr. Richardson of Washington has compiled a list of complications which includes fifty cases of severe hemorrhage with nineteen deaths[1]: Two cases of hyperpyrexia, two deaths; two cases of infarct of the lung; two cases of gangrene of the muscles of the neck; two cases of streptococci; two cases of ether pneumonia; three cases of status lymphaticus with three deaths; one case of spasm of the glottis with death; two cases of torticollis; one case of diphtheria; one case of middle-ear disease, and numerous cases of injury to the soft palate and pillars.

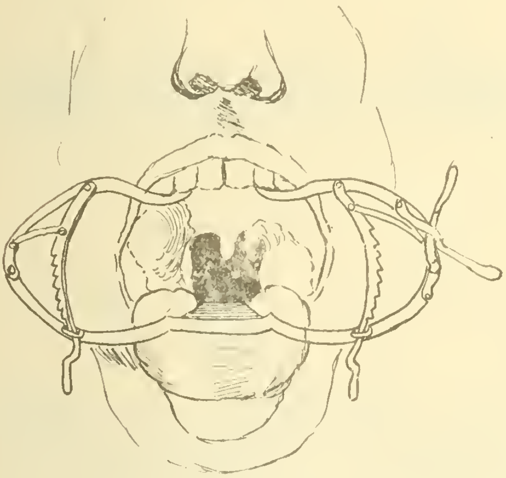


Figure 7. Showing Whitehead's mouth gag in position.

In view of these complications the writer can appreciate that much of the criticism of those opposed to this operation is just and true, on the other hand if the operation is carefully done such danger can be reduced to a minimum. Our records show several cases of mild sepsis lasting three or four days after operation. Our other complications were injury to the pillars and soft palate. There was no mortality. In 1913, 7.3 per cent. returned; in 1914, 1.9 per cent. returned.

In conclusion we wish to emphasize the following points:—

Great care should be exercised in recommending the removal of tonsils. Particularly rugged, healthy children, who sleep with the mouth open at night, need only the adenoids removed, notwithstanding the tonsils may be of considerable size. There is only mechanical obstruction to combat, not infection. Infection usually can be detected in the color, history, etc.

Having had an average experience in tonsil work, the writer is free to say he can not tell by the direct examination of the tonsil whether there is focal infection. The decision to operate has been always supplemented by the history.

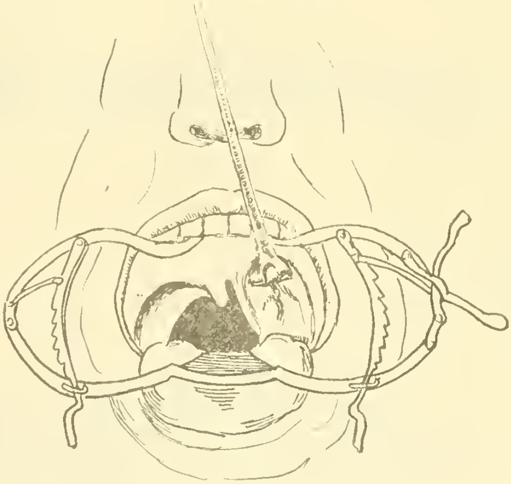


Figure 8. Showing Whitehead's mouth gag in position; also vessel exposed.

Many tonsils require as many means of attack, and the aim should be to make the first stage as bloodless as possible and with the least injury to the pillars. The operation should not be hurried on account of the patient coming out of ether, it is much better to stop work and give more ether.

Tonsillectomy has been compared to the fad operations for the removal of the ovary and appendix which were in vogue some years ago, but I am sure if you gave it a fair trial this comparison would not hold and you would all be enthusiastic advocates.

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[1] *Washington Medical Journal,* 1912.

CLINICAL HISTORY.										1913.			OPERATION.[1]								INDICATION.[2]			RESULTS.[3]				
Dif. B.	Snores.	B. B.	Th. T.	Nose. T.	Ear. T.	Colds.	Anemic.	No. Rec.	Remarks.	Name.	Age.	Date.	Size.	Sub.	C. M.	Pus.	N. T.	Hem.	Ligature.	Adenoids.	Inf. & Ob.	Inf.	Obs.	Tongue.	O^2	Ex.	XX.	Remarks.
1	1		1							R. A.	6	10-13	2	Partially						Large			1		1			
1		1	1							J. A.	3	5-26	Ad.,En.					1		Large				Coated	1			Tonsils adherent.
1			1	1		1				I. A.	13	5-26	Med.,flat	Entirely			1	1		Large			1		1			
1	1					1				M. A.	9	9-29	Medium				1			——				Coated	1			Tonsils adherent to posterior
1	1				1					A. A.	12	10-13	Enlg.	Entirely	1		1			Medium	1						1	pillar.
		1	1		1					M. B.	24	11-3	Small		1					No		1		Coated	1			Apparently no infection in
									Turn of eyc.	M. B.	9	1-13	Tough							Large, fibrous							1	tonsils before removing;
1			1			1				G. B.	9	1-13	Friable		1					Medium							1	could scarcely locate it so
1	1		1		1					W. B.	10	1-13	Diseased	1				1		Small		1					1	deeply it was embedded.
	1		1	1		1			Rheumatism.	W. B.	11	11-17	Small	1	1					Small		1		Coated	1			
								1		N. B.	8	10-13	Large	1			1			Very small	1				1			
1	1		1	1					Hoarseness.	E. B.	7	10-27	Small	1		1				Medium	1			Coated	1			
1	1	1		1	1	1				H. B.	9	9-29	Large	1	1		1			Medium					1			
1			1							Miss B.	18	1-27	Enlg.	Entirely	1			1		No					1			
			1							E. B.	20	10-10	Small	Entirely			1			Small		1				1		Treatment for catarrhal con-
								1		J. B.	8	10-27	Large							Medium			1	Coated	1			dition advised.
		1	1		1	1				A. B.	19	9-3	Large			*				None			1	Coated	1			
1			1			1				S. B.	14	9-3	Large		1	*				None			1	Coated	1			
								1		V. B.	8	1-20	Large							Large			1				1	Adenoids large over wall of
								1		W. B.	10	5-26	Large	Partially		*				Medium			1	Coated			1	vault.
1			1							A. B.	15	1-21				*			1					Coated	1			Cleft palate.
								1		Z. B.	6	11-13	Large	1			1			Large in 3 sec.			1	Coated	1			Adenoids, in three sections.
								1		D. B.	9	5-12	Normal	Nearly	1		1			Large							1	
1	1		1			1			Stupid.	E. B.	11	9-11			1		1			Small, fibrous	1			Coated			1	Improvement but difficulty in
								1		T. B.	10	6-30	Large		1		1			Large			1				1	breathing on account of de-
1	1	1	1				1			G. C.	5	2-24	Medium							Good sized							1	flected septum. Too young
1			1		1	1				E. C.	6	11-3				*				No			1		1			for operation.
1	1		1			1				E. C.	8		No							Large				Coated		1		Had operation previously.
			1			1				M. C.	20	4-14	Med.	Partially	1		1			No					1			
1			1	1		1				F. C.	6	1-20	No		1					Medium					1			
1				1						J. C.	6	9-1	2	1			1			Small		1					1	Tonsils adherent.
1				1		1				A. C.	7	10-27	No							Medium					1			Tonsils O.K. and not removed.
1						1				A. C.	10	10-27	No							One only				Coated	1			
1	1					1				F. C.	8	10-27	No							One only				Coated			1	Tonsils healthy and left. Pre-
	1		1							A. C.	7	10-13	Large	Partially	1							1		Coated		1		scribed treatment for ca-
1			1	1	1	1				R. C.	3	11-17	Large	1	1		1			Large			1		1			tarrhal condition.
	1		1		1	1				Mrs. C.	50	9-29	Medium					1	2						1			Adherent.
1			1	1	1					T. C.	11	8-15		1			1			Medium	1			Coated	1			
1	1	1	1			1				T. C.	12	12-8	Large	1			1			Small		1		Coated	1			
								1		T. C.	12	3-3	Tough	1				1		Medium							1	Upper half of tonsil only re-
1					1					B. C.	22	9-1	Large	1						1			1	Coated	1			moved.
1	1		1	1		1				H. C.	8	11-17	Large	1						Medium			1	Coated			1	
			1							M. C.	28	5-26	Small		1					Small				Coated	1			Uvula removed.
1		1	1			1				I. C.	5	9-29	Large	Partially			1			No	1			Coated	1			
								1		J. C.	9	2-24	Large	Partially				1									1	
		1	1				1			B. C.	7	1-27	Large					1		Large	1				1			
			1							Mrs.B.J.	40	1-27		Partially						No					1			Adherent tonsils.
								1		F. C.	10	8-13		1				1		Large	1			Coated	1			
								1		G. C.	13	8-13	Large	1	1					Small			1		1			
								1		W. C.	8	8-13	Large	1			1	1		Large	1				1			
								1		W. D.	3	8-13	Large	Partially						Large					1			
1					1					B. D.	5 1-2	2-24	2	Entirely				1							1			Tubercular glands.
		1	1		1					B. D.	6	1-13	2			1				Fib. and tough							1	
			1	1	1	1				E. D.	16	8-18	Small	1			1			Small		1					1	
										M. D.	5	11-3	Small	1						Med., friable							1	
1						1				M. D.	9	11-17	Large					1		Small				Coated			1	
	1				1	1				R. D.	5	6-18	Irreg.	1						——				Coated	1			
					1					S. D.	6	3-6	Large							Large					1			Tonsils removed in state of
1			1		1					K. D.	16	5-26	Broad		1		1	1		Large		1		Coated			1	tonsillitis. T. 99.04.

								1		A. D.	16	9-15	Enlg.	1	1		1			Med.,broad base	1						1	
								1		C. D.	8	9-15	Large	Partially			1			Large	1						1	
1	1	1				1				P. J. D.	19	11-17	Medium					1		Small	?			Coated	1			Apparent not much trouble with tonsils although history indicates same.
1		1				1				J. D.	8	1-20	Medium		1					Medium, F.							1	
			1		1					F. D.	6	8-6	Medium	1	1					Medium					1			
1						1			Rheumatism.	H. D.	11	8-6	Large	1	1		1			Medium	1			Coated	1			
1			1		1	1			Rheumatism.	S. E.	14	6-30	Medium	1	1		1			Med., soft	1				1			
1	1					1				J. E.		6-30	Large	1			1			Large	1			Coated	1			
								1		R. E.	6	8-18	Large	1			1			Large	1			Coated			1	
1		1								G. E.	6	6-30	Med.	Partially			1			Small					1			
								1		G. E.	10	5-12	Removed				1			Large, fibrous							1	Unable to take but portion, because of trouble to etherize on account of heart.
						1			Rheumatism.	A. E.	16	4-14	Large	1		*		1									1	
1		1				1				M. E.		6-30	Enlg.							Small			1	Coated	1			
								1		Mrs.F.E.	30	11-17	Small	Partially			1	1		None		1			1			
								1		F. E.	12	9-15	Large							None			1	Coated			1	
								1		C. E.	12	9-1	Large	1			1			Large	1				1			
1	1		1							E. E.	8	9-29	Large	Partially				1		Large			1	Coated			1	
								1		A. F.	10	9-1	Medium				1			Large	1			Coated			1	
School Physician.										K. F.	9	11-3								Medium			1	Coated			1	
School Physician.					1		1			M. F.	13	11-3	Large			*				Large	1			Coated			1	
								1		G. F.	11	1-13	Normal							1							1	Meibomian cyst removed.
1					1		1			R. G.	5	2-24	——							1					1			
								1		C. G.	14	4-14	Large	1	1		1			Small							1	Tonsils left by parent's request.
1				1		1				M. G.	8	10-4	Medium	1		*	1			Large	1			Coated	1			
1	1		1		1	1				W. G.	6	11-17	Tough		1			1		Medium	Not indicated.			Coated	1			
1	1	1			1		1			H. G.	13	11-17	Small	1		*				Medium	1			Coated	1			
					1					W. G.	4	5-12	Large	1	1		1			1				Coated	1			
			1			1	1			J. G.	15	1-27	Large	1				1		None					1			
1	1			1						D. G.	10	1-27	Medium					1		Granular							1	Patient has goiter; specially fine report.
1				1	1					M. G.		1-20	Natural							Large							1	
1			1							Mrs. G.	22	10-27	Large							None			1	Coated	1			
					1					K. G.	14	1-20	Med.	Partially	1					Small					1			
1	1				1	1	1			A. G.	4	1-27	Large	1	1					Size lima bean			1		1			
1					1	1				M. G.	8	2-8	Natural		1		1			Large		1		Coated	1			
					1					M. G.	7	2-24	Large							Enlarged					1			
1	1		1		1	1				L. H.	17	2-24	Large	1	1		1	1		None							1	
1	1		1							I. H.	7	11-17	Large					1		Large			1				1	Tonsils pedunculated.
		1	1		1	1				R. H.	9	1-27	Enlg.								Not indicated.				1			Complete relief from former throat trouble.
	1		1			1				W. H.	8	12-8	2	Partially		*				Small		1		Coated	1			
1		1				1				D. H.	4	11-17	Large	1						Large			1	Coated			1	
1	1		1		1					B. H.	11	11-3	Medium	1						Large							1	
			1						Enlg. Glands.	K. H.	15	10-15	Large	1	1		1			Medium			1	Coated	1			Patient says she has goiter.
								1		M. H.	3	6-	1	1	1		1			Large				Coated		1		O^2 except catarrhal conditions.
			1			1				A. H.	13	11-17	Small	1						Small		1		Coated		1		Patient has deflected septum.
1	1	1		1						F. H.	10	11-3	Rag.,Med.				1	1		Large	1			Coated	1			
1						1				J. H.	12	9-1	1	1		1								Coated	1			
								1		A. H.	11	9-15								Large		1			1			
1				1						A. H.	8	6-30	Large	1			1			None				Coated	1			
1		1	1							A. H.	14	11-3	1			*				None		1			1			
					1					H. H.	15	6-8	1	1						Very large				Coated	1			
1				1	1	1				A. H.	8	8-18	Med.	Partially							1				1			
								1		A. J.	8	1-13	Enlg.							1							1	
1	1		1				1			E. J.	6	2-24	Large				1			Medium							1	To return for treatment.
1					1	1				B. J.	3	2-24	Small	1			1			Small							1	Small adenoid present.
1	1	1								C. J.	4	5-26	Medium	1			1	1	1	Good sized				Coated	1			
			1		1		1			W. J.	9	1-27	Large	1		*									1			
								1		J. J.	14	5-12	Large	1	1		1			1					1			
1	1	1			1	1				M. J.	6	5-12	Large		1		1			Large					1			
			1						Rheumatism.	R. J.	9	1-12	Small		1			1		None					1			
			1							E. J.	16	4-14	Enlg.	Partially	1	*	1	1		Tough					1			
1	1		1							M. J.	16	5-26	Large	1			1			Medium				Coated			1	
								1		F. J.	4	11-17	Large	Partially	1					Large			1	Coated	1			
1	1		1							M. J.	10	5-27	Large	1			1			Medium				Coated			1	
								1		M. K.	16	1-20	Large		1					Spongy								

[1] Abbreviations: Sub., Submerged; C.M., Cheesy Matter: N. T., Necrotic Tissue; Hem., Hemorrhage.
[2] Abbreviations: Inf. & Obs., Infection and Obstruction; Inf., Infection; Obs.. Obstruction.
[3] Abbreviations: O^2 Satisfactory; Ex., Not satisfactory because of other complications; XX., Not heard from. *Very bad cases.

CLINICAL HISTORY.												1913.		OPERATION.							INDICATION.				RESULTS.			
Dif. B.	Snores.	B. B.	Th. T.	Nose. T.	Ear. T.	Colds.	Anemic.	No. Rec.	Remarks.	Name.	Age.	Date.	Size.	Sub.	C. M.	Pus.	N. T.	Hem.	Ligature.	Adenoids.	Inf. & Ob.	Inf.	Obs.	Tongue.	O^2	Ex.	XX.	Remarks.
								1		J. K.	8	10-13	Large	1	1		1			Small, fibrous			1		1			
1					1					M. K.	14	3-31	No.							Tenacious					1			Was operated on 9-23-12, for tonsils but report was not satisfactory. Was examined 3-26 by Dr. M., and operated on for adenoid. Second report, 5-8-13, O.K.
1	1					1				M. K.	4	10-22	Large	1						Large			1	Coated	1			
1	1					1				M. K.	7	6-30	Large				1			Large				Coated	1			
								1		C. K.	17	11-30	2	1		1				Large			1	Coated	1			
								1		J. K.	12	6-30	Large	Partially		*				Large			1		1			
1	1	1	1				1			W. K.	11	3-31	Enlg.	1	1					No							1	
								1		M. L.	3	9-29	Large	Partially		*				Large			1	Coated	1			
·1	1		1		1		1			S. L.	11	11-3	Large						1	Medium			1	Coated	1			
						1				H. L.	3	10-27	Large		1		1			Large				Coated	1			
1	1									M. L.	12	10-27	Large			*				Small				Coated	1			History of prev. tonsillectomy.
1	1				1					A. L.	4	11-27	2	1			1	1		Large			1	Coated	1			Uvula amputated.
								1		G. L.	12	9-1	Large	1						Large	1			Coated	1			
								1		P. L.	14	4-19	Enlg.	—											1			
1			1	1	1					N. L.	21	9-1	Enlg.	1	1		1					1		Coated	1			
1		1	1		1		1			L. L.	21	9-15	——	1			1			Medium				Coated			1	
1					1	1				G. McC.	10	1-20	Large							1							1	
1	1				1	1				M. McD.	10	6-30	Small	1						Small				Coated			1	
1	1				1					V. McG.	14	4-14				1				None						1		
1	1					1				M. McG.	8	5-26	Large	1			1			Large, fibrous				Coated	1			
1		1	1		1					A. McH.	6	11-17	Large	1	1			1		Flat			1	Coated		1		
								1		A.MacI.	10	3-31	Hard			1				Very small							1	
1						1				M. M.	17	9-1	Large							Small	1			Coated			1	Catarrhal condition present.
1			1			1	1			E. M.	13		Small	1			1			1		1		Coated	1			
1					1	1				F. M.	17	8-18	Large							Medium	1				1			
1			1	1						J. M.	5	1-20	Large	1						Large			1			1		Catarrhal condition present.
1		1	1			1				H.D.M.	2	9-1	Large	1						Large			1	Coated	1			
1	1		1							M. M.	10	10-13	Large					1		Medium			1	Coated	1			
1			1			1				C. M.	6	4-14	Large							Small							1	
								1		T. M.	12	4-31	Large		1		1			Medium							1	
1		1		1	1	1				L. M.	11	9-29	Medium	1			1			Large	1				1			
								1		H. M.	12	11-3	Large	1			1	1		Large	1			Coated			1	
1			1							E. M.	8	12-8	Large				1	1	1	Large, flat	1			Coated			1	
								1		K. M.	13	7-16	Large	1	1		1			Large							1	
								1		A. M.	21	5-12		1	1		1			No							1	Very bad ordor during operation.
1										T. M.	12	10-27	Large	1				1		Small		1			1			
								1		P. M.	12	9-13	Large	1						Large			1	Coated	1			
			1	1						J. N.	4	1-13		1						Small							1	Tonsils left intact.
1				1						S. N.	6	1-13	Small	1	1					Small							1	
1			1			1	1			K. O'B.	3	5-12	Large	1						Good sized		1		Coated			1	
								1		L. O'B.	12	7-16	Large		1					No							1	
1		1	1							L. O'D.	10	9-27	Large	1			1			Large	1			Coated	1			
1	School Physician.									K. O'D.	12	10-27	Large				1			Medium			1	Coated	1			
								1		M. O'H.	5	7-16	Large	1	1	*	1							Coated			1	
1	1	1	1		1	1				F. O.	11	12-8	Large				1	1		Large			1	Coated	1			
								1		R. O.	11	9-27	Large	1		1	1			Large	1					1		Asthma.
1		1			1	1				J. P.	5	9-15	Large	1						Large, tough	1			Coated	1			
1	1		1		1	1				R. P.	13	8-18	Small				1			Small				Coated	1			
								1		R. P.	10	3-31	Large	1			1			No					1			
								1		C. P.	12	9-	1	1	1		1			Large, tough		1					1	
1				1	1					J. P.	17	4-14	Medium	1						Medium							1	Most difficult operation.
			1			1				C. P.	17	10-13	Large			*				Large			1	Coated			1	
1		1	1	1		1	1			H. P.	6	5-12	Large	1	1		1	1		1				Coated			1	
1			1			1				W.J.P.	23	7-16	Large		1	*	1			No	1			Coated	1			
1			1							H. P.	7	9-15	Small	1	1					Small		1		Coated			1	
								1		O. P.	10	6-30	Large	1	1		1			Large				Coated	1			
1	1	1	1			1				J.M.P.	5	5-12	2	1	1		1			Large, firm							1	
1			1		1	1				G. Q.	22	12-8	Medium	1	1		1			Good sized	1						1	

1	1		1							H. R.	15	6-30	Small							Medium				Coated			1	
					1					G. R.	9	5-12		Partially			1			None			1				1	
1										L. R.	4	5-12	Large	1						Small			1				1	
								1		W.A.R.	50	7-16	Large							None			1	Coated	1			
			1			1				D. R.	7	7-16	Large	Partially	1			1		Large				Coated	1			
1	1	1	1		1	1				L.W.R.	5	5-7	Large							Medium					1			
1	1					1				A. R.	15	11-3	Large							None		1		Coated	1			
1	1				1					J. R.	16	1-13	Large	1	1			1		Good sized					1			Uvula removed.
			1		1	1				W. R.	16	6-30	Large													1		
1					1			1		J. R.	16	6-30	Large					1	1	Medium					1			
1			1		1					M. R.	10	7-16	Large				1			Small	1			Coated	1			
1			1							H. R.	11	2-24	Large	1				1		1					1			Largest tonsils have ever seen.
1			1							S. R.	21	3-31	Large	Partially						None					1			Uvula removed.
1	1							1		J. R.	12	4-14	Large	1	1		1			None	1						1	
										J. R.	13	11-3	Small							Medium		1			1			
								1		K. R.	14	12-8	Large	Partially						Large	1						1	
1	1				1					W. R.	14	12-8	Large	Partially		1				Large	1			Coated	1			
										H. R.	8	11-3	Large							Medium				Coated	1			Piece of coal in adenoid.
			1						Dr. Brady's.	S. R.	19	11-12	2				1	1	1	Small		1			1			
1	1					1				C. S.	12	10-27	Medium					1	1	Large			1	Coated	1			
								1		C. S.	3	9-10	Hyper.							Large			1	Coated	1			Child so small had difficulty in introducing.
										M. S.	8	1-13	Large	1	1					No					1			Uvula removed.
			1							D. S.	8	8-18	Large					1		Medium	1			Coated	1			
1	1	1				1				G. S.	8		Large		1					Large			1	Coated	1			
1	1				1					D. S.	6	8-18	Large	1						Large					1	1		Gathering in neck.
		1								M. S.	10	1-20	Large					1		Small								
1					1					E. S.	5	6-30	Large	1			1			1			1	Coated	1			
1	1				1	1				F. S.	16	5-12	Medium							No							1	
		1	1			1				N.J.S.	23	12-8	Medium	Partially	1					No		1		Coated	1			
1			1	1	1					H. S.	10	7-24	Large	1			1			Medium	1			Coated	1			
1	1		1		1					C. S.	6	11-7	Large	Partially						Large			1	Coated	1			
			1		1	1				J. S.	13	9-29	Large	1						Large			1	Coated	1			
						1	1			L. S.	8	10-13			1		1			Small		1		Coated			1	
	1			1		1				W. S.	8	10-13	Large	1						No			1				1	
1						1				W. T.	5	6-30	Large	1	1		1			Large			1	Coated	1			
1						1				B. T.	8	10-27	Small							Medium				Coated			1	Operated previously.
1			1			1				G. T.	10	10-27	Large	1				1	1	Large				Coated	1			
1	1		1			1	1			P. T.	15	4-7	Friable				1	1		Soft, broad, large					1			
1						1				A. T.	11	4-14	Large	1			1			No	1						1	
			1		1		1			J. T.	8	6-13	Large		1		1			Medium	1				1			
								1		K. T.	12	10-27	Medium	1			1	1		Medium	1			Coated	1			Removed uvula.
								1		B. T.	12	9-15	Small							Large	1			Coated	1			
1			1			1				M. T.	14	3-3	Medium	1			1	1		Small					1			Removed uvula.
1			1							M. V.	25	5-12	2	Partially	1			1		No						1		Goiter.
								1		Mrs.R.V.	32	10-13	Medium							No	1				1			
1										H. W.	4		Medium		1		1			Medium	1				1			
			1			1				M. W.	17	10-13	Large	1			1	1		No	1						1	
1			1							R. W.	21	11-17	Large	1		*	1	1		Large	1						1	
			1			1				M. W.	20	1-20	Large	Partially	1			1		Small					1			
1			1				1			R.G.W.	5	9-13	Small							Medium					1			Operated first Jan. 20, 1913.
1			1							K. W.	19	1-13	Good sized					1		Good sized						1		Goiter symptoms.
1			1		1					Mrs. W.	34	1-27	Small					1	1								1	
1						1				M. W.	11	10-13	Large			1	1				1				1			Worse pair ever taken.
1	1					1				E. W.	8	1-13	Small			1				No						1		
1			1		1					C. W.	10	4-14		1				1		Large					1			
1			1		1					R. W.	9	9-13		Partially						Medium			1		1			
1										M. W.	8	10-27	Large	Partially						Small	1			Coated	1			
1	1	1	1			1	1			A. Y.	12	5-26	Large	1	1		1			1	1			Coated	1			
1	1		1			1	1			R. Y.	7	11-3	Large					1		Small	1			Coated		1		
								1		P. Y.	30	12-8	Large	Partially						Medium	1			Coated		1		
1					1	1				A. Y.	13		Large	1	1		1			No					1			
			1			1				M. L.	11	11-17	Large		1		1			Medium	1		1	Coated	1			
								1		J. Y.	5	10-13	No record														1	
			1			1				F. Z.	8	8-15	Large	1				1		Medium			1		1			
			1							H. M.	10	2-24	Medium	1			1						1		1			

CLINICAL HISTORY. Jan.1,1914 to Oct.1, 1914. OPERATION. INDICATION. RESULTS.

Dif. B.	Snores.	B. B.	Th. T.	Ear. T	Nose. T	Colds.	Anemic.	No. Rec.	Remarks.	Name.	Age.	Date.	Size.	Sub.	C. M.	Pus.	N. T.	Hem.	Ligature.	Adenoids.	Inf. & Ob.	Inf.	Obs.	Tongue.	O^2	Ex.	XX.	Remarks.
	1	1		1		1				L. B.	8	1-19	Large	1			1			Medium				Coated	1			
1	1							1	No history.	F. B.	12	4-27	Op. not reported.												1			
1		1								A. B.	27	6-29	2					1		No					1			
								1	No history.	R. B.	8	6-15	Op. not reported.									1			1			
			1							R. B.	8	6-25	Op. not reported.								1						1	
			1							S. B.	12	9-21	Small	1			1			No		1					1	
1								1	No history.	E. B.	9	5-18	Op. not reported.										1				1	
1			1							N. B.	9	8-31	2			*		1		Medium	1			Coated			1	
								1	?	A. B.	3	2-5	2					1		Small					1			Adenoid removed last year.
								1	?	W. B.	7	7-27	Large	1			1			Large			1	Coated	1			Adenoid large for age.
1	1						1			E. B.	10	7-27	Large	1			1	1				1		Coated			1	
1	1		1	1		1				D. B.	10	5-18	Op. not reported.												1			
1			1	1		1				H. B.	6	5-6	Large	1			1			Medium			1		1			
								1	?	B. C.	23	6-15	2						1	1		1					1	
1	1						1			M. C.	8	7-27	Med.	Partially			1			Small		1			1			
1	1	1	1				1			D. C.	25	2-4	Large	1									1				1	
	1					1			Stammering.	M. C.	5	1-19	2				1			Small			1	Coated			1	
	1		1	1		1				J. C.	4	7-13	Medium	1			1			Medium			1	Coated			1	
								1		L. C.	9	6-15	Op. not reported.						1			1			1			
1	1		1		1					L. C.	8	4-20	Op. not reported.										1		1			
								1		L. D.	4	5-25	Op. not reported.												1			
1			1				1			R. D.	10	7-27	Small				1			Large			1	Coated			1	
1			1							M. D.	4	1-19	Large	Partially	1		1			Large	1			Coated			1	
1									School.	M. D.	8	1-19	2	1			1			Large				Coated			1	Mucn disease noted.
								1		J.C.D.	4	5-11	Large					1		Large			1	Coated	1			
								1		N. J.	24	5-25	Op. not reported.					1			1				1			
								1		E. D.	17	6-8	2							Small				Coated			1	Tonsil removed before.
								1		J. D.	12	9-28	Large							Large					1			
								1		A. D.	3	4-27	Op. not reported.														1	
								1		C. E.	19	4-27	Op. not reported.														1	
								1		A. E.	24	6-15	Op. not reported.														1	
								1		E. E.	15	6-15	Op. not reported.									1					1	
								1		W. E.	9	5-11	Large	Partially						Small			1	Coated			1	
								1		J. F.	23	6-8	Medium							Medium		1		Coated			1	
1							1			A. F.	10	9-21	Small		1				1	Medium			1		1			
1			1							J. F.	17	6-8	Large							No	1						1	
1			1							L. F.	13	7-20	Large	1				1		Large	1			Coated	1			
1	1		1			1				L. F.	10	1-19	2	1			1			Large	1			Coated			1	
1	1							1		N. G.	6	7-20	Large	1	1					Small	1					1		
1			1	1						G. G.	20	9-14	2			*				Medium		1		Coated	1			
1			1		1					W. G.	11	8-31	Medium	1			1	1		Medium		1			1			
1	1	1		1		1				D. G.	6	3-23	Medium	1			1	1	1	Small		1		Coated			1	
1	1									H. G.	10	5-18	Op. record not taken.										1				1	
1	1									M. G.	14	5-15	Op. record not taken.							No	1				1			
			1							A. G.	22	8-31	Small			*				Small		1		Coated	1			Asthma.
1			1					1		J. G.	8	7-15	No record of operation.												1			
1	1		1	1		1				L. G.	6	4-6	Small			*				Large			1	Coated			1	
								1		M. G.	17	4-20	Op. record not taken.												1			
1			1			1	1			J. G.	4	5-25	Op. record not taken.								1				1			
1									Mentally dull.	L. G.	6	7-20	Medium							Small		1		Coated			1	
1	1	1				1			Nose hem.	G. H.	7	4-20	Large	1			1	1		Large		1			1			
1	1		1					1		R. H.	9	9-14	2	1	1	*				No			1				1	
								1		J. H.	11	6-14	2											Coated	1			
								1		J. H.	16	3-23	2	1	1		1	1		Medium		1		Coated	1			Tonsil covered with plica.
								1		N. H.	6	6-29	Large				1			Large		1		Coated	1			Tonsil twice removed prior
								1		M. H.	7	11-2	Large	Partially				1	1	Large				Coated	1			to this.
1	1						1			R. H.	6	7-27	Large	1	1					Medium		1			1			
1	1		1						Bronchitis.	C. H.	12	7-27	Large	1	1		1			Medium	1			Coated	1			
1	1						1			M. H.	8	7-27	Large	1						Large	1			Coated			1	
1		1		1						J. H.	8	1-19	Large							Large			1				1	

								1		A. H.	15	6-1	2				1	1	1	Medium				Coated			1	
								1		E.P.H.	36	2-12	Medium	1			1			None		1			1			
								1		G. I.	17	2-4	Large					1	1			1					1	Tonsil inflamed; abscess.
1	1		1			1				R. I.	4	4-27	Op. not reported.												1			
1	1		1			1				M. J.	12	4-27	Op. not reported.												1			
1	1									H. J.	10	4-6	Large				1			Medium	1			Coated			1	Uvula removed.
			1							H. J.	11	6-15	Op. not reported.												1			
1	1									E. J.	10	6-18	Op. not reported.										1				1	
			1							W. J.	30	2-2	2				1						1				1	
								1		E. J.	9	4-27	Op. not reported.												1			
1			1							A. J.	15	8-31	Large	1						None		1			1			
								1		E. J.	13	9-14	2					1		Medium							1	
								1		W. K.	17	3-23	Large				1	1	1	None		1			1			
								1		J. K.	5	5-18	Op. not reported.										1		1			
								1		F. K.	9	9-28	Small							Large				Coated	1			
								1		M. K.	26	8-17	Op. not reported.												1			
1	1			1		1				H. K.	16	7-6	Op. not reported.												1			
1										G. L.	13	9-28	No							Small							1	Previous operation for tonsil.
								1		J.L., Jr.	39	6-6	Op. not reported.												1			
								1		C. L.	6	6-29	Large							Large			1	Coated	1			
								1		W. L.	19	8-24	Large			*		1	1	Large	1			Coated	1			Hypertrophied tonsil.
1			1			1	1			A. L.	3	1-19	Large	1						Large	1			Coated			1	
1	1		1							Mrs.O.L.	30	7-20	1							No		1					1	Dry pus, uvula removed.
1	1						1			M. M.	9	9-21	Large							No		1		Coated	1			
								1		F. M.	9	6-29	Large		1		1	1		Small	1				1			
1			1		1	1	1			E. M.	21	7-27	Small	1					1	None		1			1			Cold, abscess and pus; deflected septum.
1		1								Mrs.B.M.	35	6-29	Small							None					1			
								1		E. M.	3	6-15	2							1		1			1			
1			1			1				J. M.	4	5-25	Op. not recorded.												1			
1								1		M. McC.	7	9-19	Large	1		*		1		Medium		1		Coated	1			
1			1							R. McC.	9	9-19	Small							Medium		1		Coated	1			
				1		1	1			A. McL.	6	7-27	Medium			*				Medium	1				1			
1		1	1				1			F. McK.	33	3-23	2				1	1	1	None		1				1		
								1		W.McW.	18	9-28	Large												1			
1	1		1							J. N.	14	8-24	2			*				None				Coated	1			
			1							W.D.N.	27	7-13	2	1			1	1		Large		1		Coated	1			
1			1							D. O'B.	16	8-31	Small			1				Small		1		Coated			1	
								1		F. O'B.	7	8-14	2							Medium			1		1			
1			1							H. O'D.	12	2-5	2	1			1			None		1			1			
1										B. O'R.	6	7-20	No							Large					1			Tonsil had been removed.
1										L. O'R.	3	7-20	Large							Large				Coated	1			
								1		A. P.	13	4-20	Large			*			1	Medium	1			Coated	1			
								1		A. P	19	5-11	Medium					1		Medium				Coated	1			
1			1			1	1			Mrs.H.P.	27	8-27	Op. not recorded.												1			
1			1					1		J. P.	19	6-29	Small	1						None					1			
1	1	1						1		J. P.	6	8-31	2			*				None		1					1	
								1		S. P.	12	8-31	Medium		1					Medium			1	Coated	1			
								1		H. R.	7	9-14	Medium			*	1			Large	1			Coated	1			
								1		R.B.R.	5	6-1	Large							Large	1						1	
1	1	1								L.R., Jr.	3	6-29	Small	1						Small			1	Coated	1			
								1		A. R.	17	4-20	Medium		1			1		Large	1						1	
1				1		1				M. R.	9	2-11	2							1							1	Suspect T.B.
1			1			1	1			D. R.	3	6-29	Large	1			1	1		Large		1		Coated	1			
1				1						R. R.	4	1-19	Large	1			1	1	1	Small			1	Coated	1			
1							1			E. R.	3	7-20	Large	1			1			Medium		1					1	
1				1						A. S.	6	1-19	Small							Small		1		Coated			1	Cold abscess.
1										J. S.	14	7-20	Medium	1						None	Not Indicated.						1	
1				1		1	1			D. S.	4	8-31	Large		1		1	1	1	Large	1			Coated	1			
								1		B. S.	14	4-27	Op. not recorded.												1			
1			1						Glands enlg.	E. S.	13	5-18	Op. not recorded.										1		1			
1			1							Mrs.L.S.	28	8-31	Small Partially				1			No				Coated	1			
								1		W. S.	4	5-25	Op. not recorded.								1				1			
			1			1				P. S.	19	6-15	2			*		1		1				Coated	1			
1	1	1		1		1				H. S.	14	4-6	Large	1				1	1	Large			1	Coated	1			Adenoid growing again.
1			1	1						P. S.	7	6-29	Large							Medium	1			Coated	1			
1										D.S., Jr.	13	4-20	Large	1			1		1	Large	1			Coated			1	
								1		M. S.	7	4-6	Medium. Partially							Medium	1			Coated			1	

CLINICAL HISTORY.										Jan.1,1914 to Oct.1,1914.				OPERATION.							INDICATION.			RESULTS.				
Dif. R.	Snores.	B. B.	Th. T.	Ear. T.	Nose. T.	Colds.	Anemic.	No. Rec.	Remarks.	Name.	Age.	Date.	Size.	Sub.	C. M.	Pus.	N. T.	Hem.	Ligature.	Adenoids.	Inf. & Ob.	Inf.	Obs.	Tongue.	O^2	Ex.	XX.	Remarks.
								1		M. S.	5	7-20	Large	1			1			Medium	1						1	
			1			1				Mrs.J.S.	42	6-15	Small							No					1			
								1		E. T.	8	4-6	Small				1			No		1		Coated	1			Uvula removed.
								1		C. T.	10	4-6	No							No.	Not indicated.						1	
1			1			1	1			W. T.	11	5-11	Large	1			1	1	1		1				1			
								1		M. V.	8	5-11	Normal							Medium			1		1			
1	1				1	1				E. V.	23	6-25	Op. not recorded.									1			1			
1	1		1							L. W.	13	8-31	Medium	1	1		1			Small	1			Coated	1			
								1		H. W.	10	6-15	Op. not recorded.								1						1	
1			1			1				S. W.	15	1-19	Large	1				1	1	Medium			1	Coated			1	
1			1			1				H. W.	14	7-20	Medium	1	1					Medium		1		Coated	1			
1			1					1		H. W.	6	9-14	Medium							Large			1				1	
							1			H. W.	19	8-24	Medium						1	Small		1		Coated	1			
1	1	1	1			1				M. W.	9	3-23	Large				1	1	1	Small	1			Coated	1			
1						1				B.W.W.	25	6-29	Medium.		1					None		1					1	Abscess and liquid pus.
1	1	1	1	1		1				M. W.	13	6-6	Large							1		1			1			
1			1							J. W.	9	9-28	2	Partially						Large					1			
									Anemic.	Oct.1,1914,to Dec.31,1914.																		
1	1					1				A. A.	22	10-10	Medium				1			No								
1			1			1			Nose bleeds.	E. A.	16	11-9	Large	1			1				1		1	Coated	1		1	
1	1		1			1			Last winter	M. A.	5	12-14	Large	1						Large	1				1			
1			1					1	in school.	J. A.	6	12-7	Large			•				Medium			1		1			
			1						Tonsils in-	M. B.	21	10-10	Medium				1	1		None		1			1			
1	1		1					1	flamed.	J. B.	11	11-9	Record not given.												1			
1	1	1				1				C. B.	18	12-7	2				1			Small		1			1			
1	1		1					1		H. B.	16	11-23	Large	1	1		1			Large	1			Coated			1	
1	1	1	1		1	1				R. C.	5	11-30	Medium				1			Large			1		1			
1			1					1		A. C.	14	10-26	Large							Large			1		1			
										L. C.	13	11-2	Large	1										Coated			1	
			1						Sub. to quinsy.	T. C.	53	11-30	Medium	1			1					1			1			
			1					1	Rhinitis.	J D.	15	11-9	Large										1	Coated	1			
1								1		J. D.	12	11-9	Large		1					Large	1			Coated	1			
1	1		1		1					W. D.	19	11-2	2		1							1					1	Cold abscesses.
1				1	1					J. D.	3	11-23	2				1			Large				Coated			1	
1			1		1			1	Rhinitis.	K. G.	11	12-7	Small							Large			1		1			
									No history.	K. G.	12	11-2	1					1		1					1			
1	1		1							P. G.	29	10-26	Large	Partially	1		1			None		1					1	
1	1	••		1						W. H.	10	12-7	Medium				1			Large			1	Coated	1			
1	1		1					1		J. H.	3	11-2	Large	1		•				Large		1			1			
1								1		J. H.	8	11-9	Large	1	1	1	1			Large		1		Coated			1	
1			1						Defec. speech.	R. H.	9	11-23	1	1	1		1			None					1			
			1					1	Headaches.	I. H.	15	10-23	Medium				1	1	1	Large	1			Coated	1			
1			1	1		1		1		E. H.	57	2	1				1			No		1		Coated	1			
			1					1		E. K.	10	10-10	Large	1		•				Small	1				1			
1			1							C. J.	7	12-14	Medium							Small			1		1			
1									Previous op.	W. J.	8	11-30	2							No		1			1			
1			1					1		L. J.	7	10-26	Large					1		Large			1			1		
1	1		1							L. K.	9	10-26	Large	1	1					Large	1			Coated	1			Uvula amputated.
1	1							1		J. K.	9	11-9	Large	1						Large				Coated			1	
1			1					1		A. K.	9	12-14	Medium	1	1					Large			1	Coated			1	
1			1					1		A. K.	10	12-14	Small			•				Large	1			Coated			1	
1	1		1							M. L.	12	12-7	Large	1			1			1			1	Coated	1			
1	1		1					1		R. L.	6	12-7	2	1			1			Large	1			Coated			1	
1	1		1							W. L.	8	12-7	Large				1			Medium		1		Coated			1	
			1			1			Nervousness.	M. L.	17	12-7	Large					1	1	No			1	Coated	1			

1		1					1		D. M.	9	11-23	Large	1	1		1			Large			1	Coated	1			
1	1					1	1		O. M.	7	11-23	Large	1			1			Large	1			Coated	1			
1	1					1	1		H. N.	7	11-2	Large							Large					1			
1			1				1		H. O'D.	14	12-7	Large	Partially	1					Small			1	Coated			1	
1			1				1		W. O'D.	12	12-7	2	1	1					Large	1			Coated			1	
1		1	1				1		J. O.	9	12-14	Large		1					Large	1						1	
								No history.	L. P.	7	12-14	Large							Large			1	Coated	1			
1			1						E. R.	7	10-12	Large							Large	1						1	
1			1						K. R.	13	11-23	Large	1			1			Medium				Coated			1	
1			1				1		E. R.	10	11-2	2									1					1	Cold abscess.
			1					No history.	D. R.	8	10-10	Large	1						Small		1					1	
1	1								K. S.	13	11-2	Large							Large				Coated	1			
1	1		1			1	1		F. S.	10	11-23	Small	1		1				Medium		1		Coated	1			
1					1				G. S.	22	10-10	2	Partially	1		1	1	1	No		1			1			
1	1		1				1		M. S.	22	10-26	Small							No	Questioned.					1		
			1	1					Mrs.J.S.	32	10-12	1				1			No					1			
			1				1	Dull headache.	M. U.	10	10-10	Large	1						Large	1			Coated	1			
1				1			1		M. W.	9	11-9	Small							Small								
				1		1			H. W.	7	11-23	Large	1						Large	Questioned		1	Coated	1			
								No history.	F. W.	12	11-2	No record.										1		1			
								No history.	W. W.	6	11-30	Large					1	1	Large			1				1	

**Hoarseness.

HISTORY OF OPERATIONS FOR THE YEARS 1913 AND 1914, GIVES THE FOLLOWING STATISTICS.

No. cases, 448; age from two to fifty-eight years.

Size of tonsils: Normal, 6; medium, 172; enlarged, 214; small, 45; none present, 11.

Submerged tonsils: Entirely submerged, 169; partially submerged, 42; not submerged, 237.

Leptothrix or cheesy matter was found in 92 cases; pus in 11; necrotic tissue in 145; unusual hemorrhage in 94; ligation in 34.

Indication: Infection and obstruction, 158; infection only, 125; obstruction only, 158; questioned, 7.

Coated tongue noted in 203 cases.

Results: Satisfactory, 275; not known, 151; referred for further treatment or other symptoms, 22.

Known histories not included in statistics 152.

Operations: Years 1911 and 1912, 380 cases; 1913, 246; 1914, 202; total 848 cases.

Results (so far as ascertained): Satisfactory; Years 1911 and 1912, 88; 1913, 148; 1914, 127.

Referred for other treatment: Years 1911 and 1912, 20; 1913, 18; 1914, 4; total results 405.

Report of age, 600 cases. Range of age, from two to fifty-eight years:—

2 years, 3 cases; 3 to 7 years, 139; 8 to 12, 239; 13 to 16, 118; 17 to 21, 52; 22 to 26, 22; 26 to 30, 10; 30 to 40, 12; 40 to 50, 2; 50 to 60, 3.

THE NOSE, THROAT AND EAR AS NEIGHBORING ORGANS TO THE TEETH.

BY WILLIAM REDFIELD BUTT, M.D.,
Philadelphia.

(Read before the Academy of Stomatology of Philadelphia, April 27, 1915, and the North Philadelphia Association of Dental Surgeons, May 12, 1915.)

Believing that an exchange of ideas in neighboring specialties is helpful, I shall offer these remarks from the view point of a throat, nose and ear specialist, and exhibit some specimens used in teaching operative rhinology at the Philadelphia Polyclinic Postgraduate School.

Dentists as well as rhinologists, and physicians in general, have occasion to remember the distribution of the trifacial nerve over the face, and including the ear, nose and throat as well as the teeth, and the many cases of referred pain which arise from this distribution. Thus I have been consulted for earache in cases

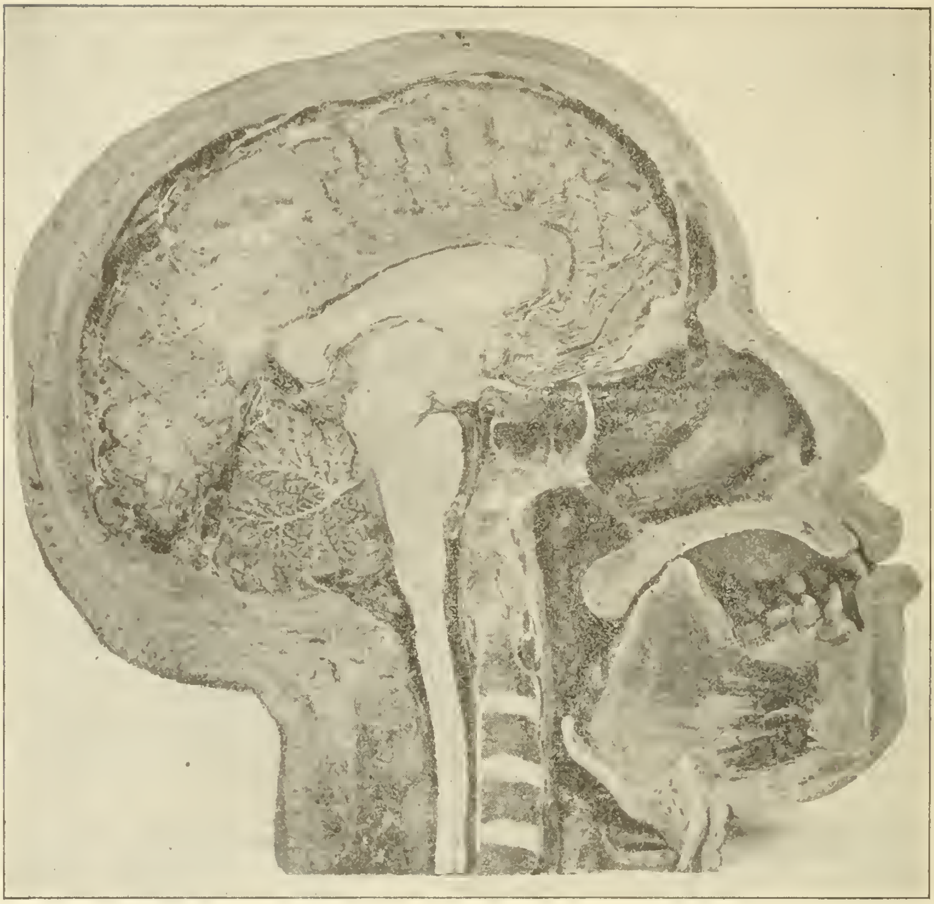

Figure 1. Showing general relations of the nose and throat. The position of the tongue is that which sometimes occurs under deep anesthesia, showing how breathing is thus interfered with.

where the ear was entirely normal, and in which the pain felt exclusively in the ear arose entirely from irritation of the fifth nerve produced by a decayed tooth, the sole treatment consisting in having a dentist clean and fill the tooth which resulted in immediate disappearance of the earache.

I have also seen exactly the reverse of this in a case of acute inflammation of the ear, a case in which the pain for two days was localized around several crowned molar teeth, and the ear as being the cause was not suspected even by the patient herself until later events proved that all the pain referred to the teeth had arisen from the ear, which examination showed to be inflamed and which afterwards suppurated.

This inability of patients at times to distinguish between pain arising from the ear and from the teeth and mouth is most remarkable. I have seen many patients complaining of sore throat or earache in which the painful sensations were found to arise from unerupted wisdom teeth, ulceration of the gums or decayed teeth. One patient with infection around an impacted wisdom tooth had ear pain for a long time, which would appear and disappear according to the conditions around this tooth, while the ear itself was absolutely normal.

Paralysis of the facial (seventh) nerve (the motor nerve of the face) may also come under the dentist's observation, giving as it does interference with mastication through paralysis of the cheek and lip muscles; and it is always to be remembered that this is very often caused by disease in the ear or mastoid cells through which the nerve passes to reach the face.

Cases of mouth breathing in children, malformed palate and nasal obstruction call for coöperation of the dentist, or orthodontist, and the rhinologist. It is a fact of fundamental importance that dental regulation of the erupt-

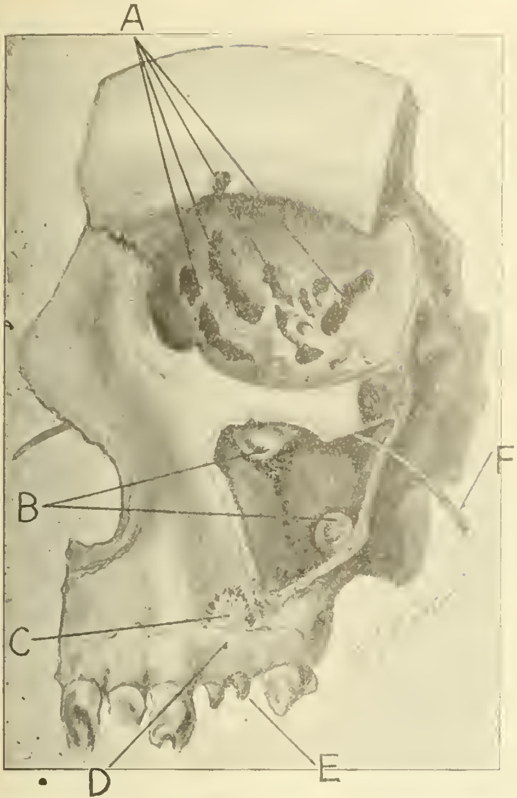

Figure 2.* Showing A, ethmoidal cells opened from orbital aspect and found normal. B, polypi in maxillary antrum, upper one located at the site of the ostium. C, area of necrosis around first bicuspid tooth. D, a fistula opening from necrotic area around tooth onto the gum. E, carious first bicuspid tooth.

ing teeth and the proper formation of the dental arch with proper occlusion have a primary effect on the shape of the nasal cavity and the nasal septum; but it should also be stated that many other factors are concerned in the formation and functional usefulness of the nasal cavities. Bowing of the nasal septum and ridges along its base, caused by defects of eruption of the incisor teeth, make a crying call for dental regulation during the period of development in childhood—and herein lies a great hope of preventive medicine in the immediate future.

Deflected nasal septum in adults, however, is a different proposition altogether. Here the septum has been bent and the different parts have so overlapped each other from excessive growth in a confined space that the septum has grown firmly into a distorted shape and would not spring back into a straight line even if the hard palate were entirely removed.

The septum in this case is like a broken bone which has grown together in a bent position, with thickening at the point of bending. For this condition rhinologists possess an ideal operation, the submucous resection of the septum. This operation is done under cocain anesthesia; and, absolutely without pain and without disabling the patient, restores his septum to the normal at once. It is necessary to state that these truly brilliant results are obtained uniformly only by thoroughly trained hands; and much discredit can possibly be brought to this operation as to tonsillectomy in the hands of thoughtless and shortsighted operators. No dentist or physician need hesitate heartily to recommend this operation to any patient needing it.

I would call attention of orthodontists and dentists to the fact that unlimited increase in the width of the nasal cavity is not always to be desired, as a too wide-open nose is almost as undesirable from a functional standpoint as a contracted nasal cavity, producing, in fact, practically the same effects as mouth breathing, *i. e.*, by allowing the air to rush on into the lungs before it is properly warmed and moistened by contact with the nasal mucosa. I believe that, in the class of cases in which spreading of the dental arch is usually undertaken, there is little danger of surpassing normal limits.

The proper treatment of the nasal accessory sinuses (of which the antrum or maxillary sinus is one) requires a deeper knowledge and experience on the part of the rhinologist than that of almost any other part.

The antrum, being in relation to the roots of the teeth along its floor, has one more source of infection than the other sinuses, and is thereby brought within the dentist's and oral surgeon's sphere. Rhinologists are ready to cooperate with the dentist or oral surgeon in the treatment of the antrum and, by their ability to treat this cavity through its nasal wall, have what, for many conditions, is a simpler and better method than treating this cavity through the alveolus. Where a general infection of the antrum is suspected, a simple puncture through the nasal wall with a suitable hollow needle, under cocain anesthesia, allows us to wash out the cavity and show at once positively whether or not it contains pus. With the same kind of local anesthesia, a large permanent opening can be made along the floor of the naso-antral wall for drainage. The usual Caldwell-Luc operation through the front wall behind the canine tooth is wisely reserved for cases in which simple drainage is insufficient.

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*Figures 2 and 3 show the progress of an infection from a diseased tooth root, through the maxillary antrum to the nasal cavity, the infection having left pathological changes along its course which mark its pathway.

Rhinologists see many cases of antrum infection following similar infections in the nose, especially after grip, in which there seems to be no involvement of the teeth; and others in which there is pain in the teeth apparently due to irritation of the dental nerves within the antrum. Too great care can not, however, possibly be taken in searching for a dental origin for all antrum infections; and I have seen cases clear up immediately after extraction or attention to the offending tooth.

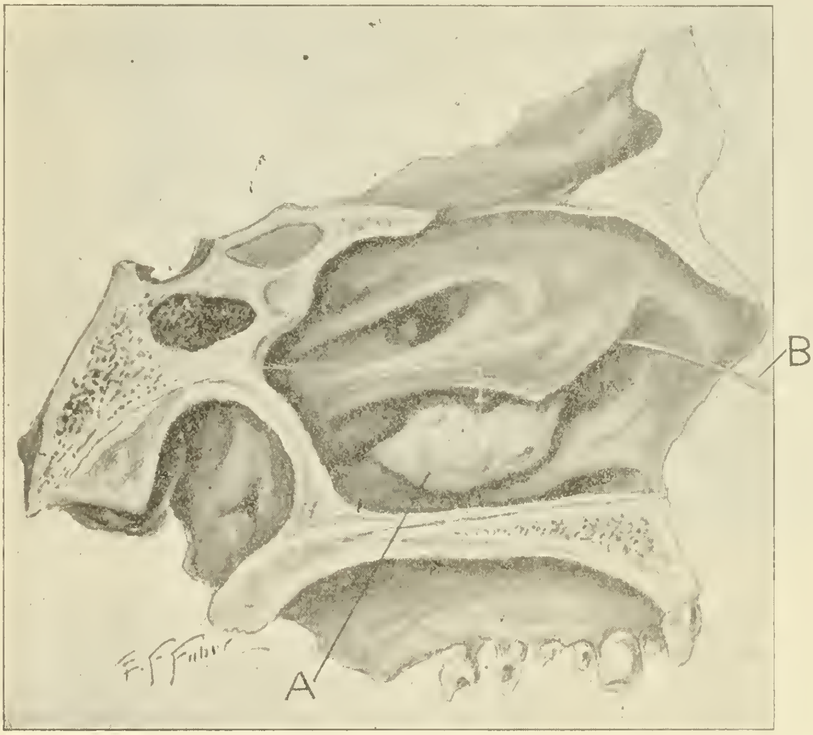


Figure 3.* Showing further extension of the infective process through the ostium on the maxillary antrum into the nose, marked by pathological changes along its path. A, large polypi in nose growing from the lip of the maxillary ostium. B, bristle passed from antrum to nose through the ostium.

Considering that the antrum is a part of the nasal cavity, we find that, when it is infected, it is often only a part of an infection involving other of the accessory sinuses. Thus pus from the sinuses higher in the head may and does drain into it. In such a case the antrum acts as a reservoir for the pus formed elsewhere, and it is the duty of the rhinologist to follow the pus to its source.

A case of antrum suppuration in a woman seventy-six years of age now under my care, who has been without teeth for years, and whose alveolar processes show no signs of old roots or fistulas, is an example of maxillary sinusitis not associated with dental caries. In such cases in elderly persons the possibility of a malignant growth within the antrum should always be borne in mind. I have seen a carcinoma beginning within the antrum giving at first, signs only of a suppuration in that cavity. This patient had also a fistula in the region of a molar tooth, discharging a thin, foul-smelling and (to the patient) foul-tasting pus. Later, this cancer involved the orbit and ulcerated through the cheek.

Dentists must frequently see patients who are extremely uncomfortable in the dental chair on account of mucus and pus dropping down into the pharynx while the head is thrown back. These are usually cases of nasal catarrh or sinusitis in which a discharge is thrown off and falls down the pharynx, a condition which can always be relieved and usually cured. Sore throat and hoarseness as well as indigestion are often due to the constant dripping of this infected matter down the pharynx from the nose.

With the bronchoscope, esophagoscope and the suspension laryngoscope, the laryngologist can now view and remove foreign bodies from the lungs and esophagus. Dr. Jackson of Pittsburgh, the leading American authority on bronchoscopy, reports the removal of a dental broach from one of the terminal bronchioles in the lung.

A dental friend of mine allowed a broach with a cuff on it to slip from his finger while working in the patient's mouth; the patient thought it had stuck in his larynx but examination did not discover it. An *x*-ray also failed to show it in the throat or thorax, and on the next day it passed out of the distal end of the patient's intestinal tract without trouble; and the dentist now has the broach in his instrument case as a memento.

Finally, I would remark that there is a field for the use of the dentist's gas-oxygen apparatus in the office work of the medical man, and, where dentists and M.D.'s are located convenient to each other in practice, this can be used with profit to both.

For opening the drum membrane and incising furuncles in the ear canal, places where local anesthetics fail, gas-oxygen anesthesia in the office avoids a trip to the hospital or an otherwise very painful procedure, and is one of many occasions in which dentists and M.D.'s may well work together.

CASE REPORTS PRESENTED IN THE CLINICAL MEETING OF THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, PITTSBURGH SESSION, SEPTEMBER 22, 1914.

GLAUCOMA IN A YOUNG MYOPE WITH ATROPHY OF THE IRIS AND BULLOUS KERATITIS.

BY EDWARD STIEREN, M.D.,
Pittsburgh.

Miss A. M. P., aged twenty-eight, was referred by Dr. R. R. Jones, September 19, 1914. R. V. 6/80 — with — 4.50 D.S.=V 6/10 +; L. V., 6/80 — with — 4.50 D.S.=V 6/20 —.

Right eye shows cornea, iris and media negative; a moderate physiologic cup of disc; tension 24 mm. Left eye shows a general diffuse haziness of the cornea. The iris presents a coloboma nasally embracing almost the entire width of the iris. According to the patient's statement this coloboma developed slowly, in about a year's time, and was preceded by the appearance of a yellow spot on the iris midway between the pupillary margin and the root of the iris. There had never been any inflammation or pain in the eye until recently, when she had experienced a jagging or scratchiness of the eye. The tension of the eye at this time was 32 mm.

The disc is markedly cupped, only a small ring of nerve remaining on the nasal side, the base of the cup having the greenish-grey color of optic atrophy.

Subsequently it was observed that intermittent attacks of bullous keratitis would occur with every rise in tension, which would subside in several days under the use of eserin and holocain. These rises in tension would occur usually at menstrual periods and would reach as high as 57 mm.

As the "spot" on the iris which the patient had noted previous to the development of the coloboma might have been either a tubercle or a gumma, she was sent to the South Side Hospital, February 26, 1914, for thorough clinical tests. A tuberculin test, consisting of serial O.T. in ascending doses to 6/10 mg. No. 3 serial, proved negative as did also Wassermann and Noguchi tests. Urinary analysis negative.

It is pertinent to note that the pupil would dilate *ad maximum* with a weak solution of homatropin, promptly contracting to eserin afterwards, denoting unimpaired muscular action of the iris.

The patient was seen by Dr. George E. de Schweinitz early in April 1914, who reported as follows:—

"It seems to me a most interesting condition of affairs. The conditions are evident enough high myopia with glaucoma, repeated attacks of bullous keratitis and atrophy of the nasal side of the iris. I hardly think that the case belongs to those which have been described by Casey Wood, Harms and others in which there was progressive atrophy of the iris terminating in glaucoma, inasmuch as Wood seems to think from his investigations that glaucoma was an incident in the process and not the cause of the atrophy. My own feeling in the present case would be that the condition is somewhat like that which has been referred to by Hirshberg in which the glaucomatous process in a highly myopic eye was the primary condition; that a fibrino-plastic cyclitis, perhaps localized, may account for the so-called yellow spot, the disappearance of the exudation being followed by the atrophy of the iris which is evident. Certainly the field is now typically glaucomatous, the cup which you describe can be plainly seen even through the hazy cornea, and the tension, in spite of the continued use of eserin is almost 40 mm."

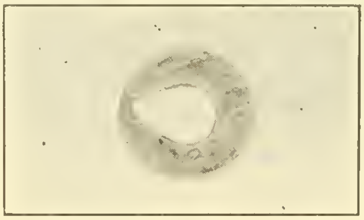


Figure 1. Atrophy of the iris.

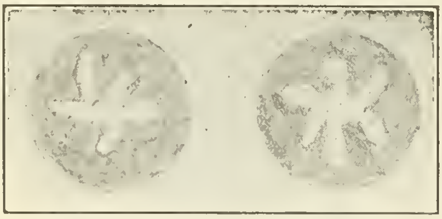
As a relief measure and also to secure a section of the iris for microscopic study an iridectomy was attempted May 20, 1914. The corneal incision was made on the nasal side and all efforts to grasp the iris in the forceps proved futile, the iris tissue being so friable and atrophic as to tear into shreds. It was found to be simply impossible, after numerous attempts, to draw the iris out of the anterior chamber, and a satisfactory iridectomy could not be performed.

July 7, 1914, the eye was trephined and the condition so far as comfort to the patient is concerned, is much improved. The tension now is but 18 mm. The cornea however remains cloudy and vision remains low, 4/80, which must be partly attributed to the hazy cornea. There is an occasional recurrence of bullous keratitis at menstrual periods which however is not severe, nor does the intraocular tension rise at these times.

CONGENITAL CORALLIFORM CATARACT.

BY EDWARD STIEREN, M.D.,
Pittsburgh.

H. S., aged thirty-nine, has had poor vision and a converging left eye since infancy. R. V., 6/32; L. V., fingers at one foot. Both pupils dilate *ad maximum* with homatropin. There is a congenital cataract of each lens, of the type known as fusiform or coralliform, the radiating opacities resembling the branched twigs of a piece of white coral, between which the lens is clear, as is also the periphery of the lenses. Both eyes are almost similarly affected, the reduced vision of the left being due no doubt to *amblyopia ex anopsia*. The affliction is probably transmitted in this man's case as his father and grandfather both possessed poor vision.



Right eye. Left eye.
Figure 2. Congenital coralliform cataract.

A CASE OF ECTROPION.

BY EDWARD STIEREN, M.D.,
Pittsburgh.

This poor unfortunate was caught beneath a hot slag-bucket as it fell from a hoist, pinioning him under it for ten or fifteen minutes before relief came. The entire right side of his face including the ear was burned off and the resulting cicatrization about the orbit has completely everted both lids.

The case will be difficult of repair, inasmuch as there is no healthy skin any place near the eye that can be utilized for a flap. Skin grafting, after dissecting the lids back into place, will be tried although it is too much to hope that the condition can be relieved with one such procedure only.

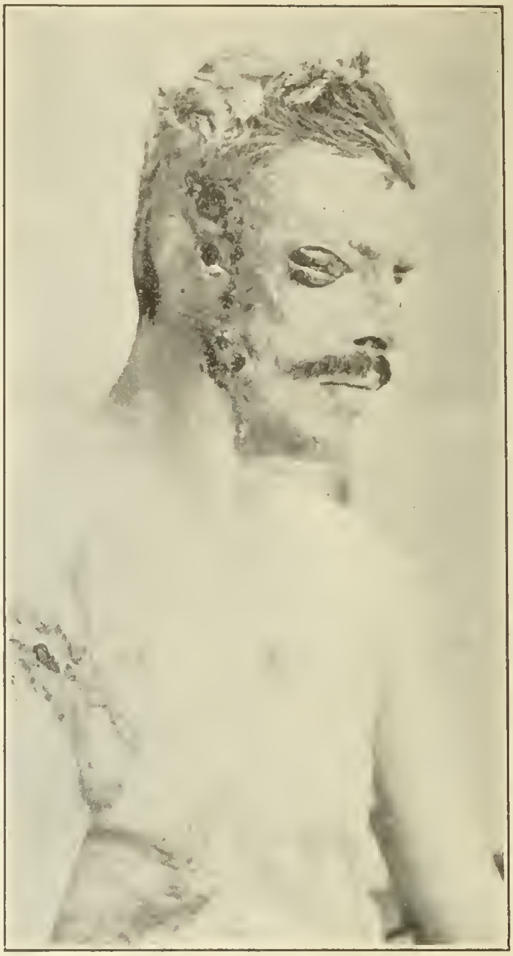


Figure 3. Ectropion.

CASE OF CONGENITAL MALFORMATION OF THE CORNEA.

BY EDWARD A. WEISSER, M.D.,
Pittsburgh.

This case shows a cornea almost completely opaque, in an eye slightly microphthalmic, occurring in a little girl of eight years of age. The opacity is almost dense white, but at a point or two there is a small spot of partially clear cornea through which the iris may be seen. There is no staphyloma or any other complication. Hereditary history is negative. Vision in the healthy eye normal, in the diseased eye vision is nil.

A CASE OF OCULAR INJURY.

BY JOSEPH E. WILLETTS, M.D.,
Pittsburgh.

The patient was burned about the eyes and face, from an explosion of oxygen gas, and immediately on recovery received a second injury of the eyes, from a similar explosion.

When I first saw the patient, the brows and lashes were burned off. The conjunctiva and cornea of both eyes were covered with a black deposit of carbon and foreign bodies. Under cocain this was removed with the exception of a black spot on the sclera of the right eye, which, owing to the pain and shock the patient was suffering from, was allowed to remain, to be removed later. The epithelial layer of both corneas was exfoliated. Atropin and cargentos was instilled, the eye dressed antiseptically, and the patient made an uneventful recovery with normal vision. Patient said he could see better than before the accident. which is probably true, because of the proper correction of a refractive error.

The right eye was congenitally amblyopic and highly astigmatic. R. V., 20/200 W. —1. Sph. ⊂ +6. Cyl. ax 100=20/40; L. V., 20/30 W +.37 ⊂ +.75 Cyl. ax 140=20/20.

Patient was in the hospital one week, received office treatment for two weeks and returned to work one week later. On account of the long use of atropin he was advised to wear smoked glasses and not to use the torch.

The second injury, which was more severe than the first one, was received a few hours after returning to work, and consisted of lacerated wounds of the right eyelid, cheek and neck in addition to the burn. The right eye was closed. Examination showed both conjunctival sacs and cornea filled with foreign bodies, there was a cut at the sclerocorneal margin of the outer inferior quadrant of the right eye, which apparently had not penetrated the eye, as the anterior chamber was intact.

An ophthalmoscopic examination could not be made at this time, and it was a question if a piece of glass from the broken smoked glasses he was wearing had entered the eye or not. Small pieces of glass were removed from the eyelid, cheek and neck.

The foreign bodies were removed from cornea and conjunctiva, and the eye dressed as before. At the end of the first week there was a slight iritis of the right eye, which soon subsided. An x-ray was not taken. The patient has full visual power.

Dr. Ellice McDonald, in the *New York Medical Journal*, gives the following directions for preparing lubricating jelly. Take 3 ounces of Irish moss and wash in running water for half an hour. Place in 1 quart of water and boil in a double boiler for 10 minutes, stirring constantly. Pass through a fine wire strainer and if it does not flow readily, it may be expressed through the strainer by rubbing a large spoon against the meshes of the wire. The strained jelly is put back on the stove and sterilized by boiling. Enough water is added to make it of a jelly-like consistence. The jelly may be put into collapsible lead paint tubes or into small wide-topped bottles. The containers should be sterilized by boiling. A mild antiseptic like eucalyptol, etc., may be added. The lubricating jelly thus made costs about 5 cents a quart.

"MEDICAL ECONOMICS."

BY ALFRED A. LONG, M.D.,
York.

(Read before the York County Medical Society, December 3, 1914.)

It is pertinent to quote here the old saying that the professional men, both in medicine and law, work hard, make money, live well and die poor. This statement is lamentably too true, but should not be. You may think it presumptuous for any one with as small a capital as mine, to write a paper on medical economics, but perhaps something in my knowledge and experience, covering a period of more than thirty-seven years of active practice, may help some of my younger listeners, who may be alike weak, and are now making the same mistakes, which have in the past been made by others. It is a fact, well known to many of us, that in years of practice, quite a few have made and collected a very good amount of money; sufficient to have had much more of an accumulation than they now have.

While this picture is true of some, we have another class, those who have enjoyed very lucrative practices, accumulated considerable money, and when they were approached by blue sky promoters, with wild and speculative myths, backed by a good line of talk which was as visionary as it was dishonest, were induced to invest in stocks on which they were promised big returns, only a little later to learn that the financial bubble had burst, that no earnings were forthcoming, that the money which they had invested could not even be seen by the aid of an oil immersion lens, and that the feeling which they had of safety, by being let in on the ground floor, had been destroyed.

I want to urge upon every physician the importance of saving a little each year of his annual collections. There are but few who can not do this and, when sufficient is accumulated for investment, he should go to a good banker and ask his advice, telling him he does not want anything that pays at this time over five per cent., that it is security he wants along with investment. He may, in many cases, be obliged to take a less rate of interest than five per cent.; more than this is a bid for financial loss, except possibly on good real estate first mortgages which are very difficult to get. He should insist on all investments being as near home as possible, the nearer the better, and particularly, if possible, have nothing to do with any investments originating in New York City. It is many times an overcapitalized and overtaxed city, with a people crazed with the determination to get money at any cost in order to meet their cost of a life that is leading a pace that knows no limit, and any man who engages with the ordinary New Yorker, in a business enterprise, is pretty sure to get worsted.

I believe that one of the best investments for the physician is a consistent amount of life insurance, preferably on the monthly income plan; but he should never allow the agent, by a line of talk, to overload him with insurance, because sooner or later he will become disgusted with paying in excess of his ability and may be tempted to discontinue all. Our legitimate expenses are always high in comparison to our incomes, and I think all will agree with me, that it is wise at all times if in any way possible, to keep sufficient money on hand to pay our bills promptly, and if we can have a bank account pay by check. I think this is probably the best legitimate advertisement, that is perfectly right and allowable, and I am sure it impresses the business public more favorably to receive a check in payment of a bill, than to receive the money from our hands.

Returning to the thought of investments, I was very much surprised lately by being told by one of our intelligent bankers that, when the blue sky promotors drop in on our city, the first class of people whom they canvass are the physicians, and also that this is true, as known by bankers, the country over. It is certainly time that they were getting away from the idea that we are so easily duped. I know that in the last ten years, we have been very vigorously canvassed by a lot of human parasites, to buy stock in such alleged corporations as rubber, pecan orchards, lumber sawing mills of immense forests, trolley lines permeating vast territory, and last but not least the persistent New Yorkers who had stock to sell in a company that made type which everybody would have to use, and they would be able to give returns that were flattering beyond all conception. The first dividend was almost in sight, but as yet none has materialized, and the glib-tongued salesman is now not within the reach of any of his victims. I well remember the great agent who was selling stock in the pecan orchards. He was easily the best-dressed and jewel-bedecked man that I have ever met, and had in his possession a letter from a man who formerly knew me intimately, urging me to buy a few shares of the stock while it could yet be obtained, and thereby, through the investment of a small amount of money be placed in a position where in a few years I would be made independently rich. Within the last few days I have learned of one of our members, who has been enjoying a very lucrative practice and has accumulated considerable money that has joined with a few others to create a company to manufacture a very popular commodity, which has not as yet assumed a business basis anywhere, and I predict that in the near future he will be a lamb shorn to the skin.

Many men, well skilled in the science of medicine, are lamentable failures when it comes to actual practice; not so much from their failure to understand, to diagnose, and to treat disease, as to make a livelihood and to know how to get along with their patients and other doctors. It may be well for such to pause and to ask the reason therefor. How can this be better done than by a retrospective view of one's life from the date of graduation? Many of us, I know, would be convinced of many errors of the past, which we should do our best to correct. I want to quote what recently came to my notice at the head of a good contribution to medical economics: While we as physicians desire to be scientific students and practitioners of medicine, yet we desire also, for the welfare of our dependent ones and for the sake of our standing in the community, to secure a fair compensation for the services we render to our fellow men. Under this head, I think a word as to fees is in order, and as to this I believe that every physician should be a law unto himself, that he should be conscientious in this matter and consider well the value of his services in each particular attendance to his patient, considering what is just to both himself, and his patient. We all, some more than others, have patients who can well afford to pay in full for our attention, and some who can not and, with this latter class, we should not forget to be merciful. I believe a very important position for us all to assume, is in the beginning of our career, to take our wives into our confidence, as to our income and expenses (I was not always of this opinion). I believe that there are but few life companions who would not sooner curtail expenses and thereby live within their means, and pursue a course that would lead to an asset that is always a happy condition; namely, peace of mind. It goes without saying that the very best we can do for our own and our patient's welfare, and a sure financial return, is careful and persistent use of our textbooks while engaged in combating disease. It will, in every instance give us valuable returns in alleviating the sick and putting money in our pockets, as well as giving us a consciousness of having done our duty.

If I say just a word of consultations, I hope my friend who is to follow me will not blame me for stealing any of his thunder. As this really comes within the province of my paper, I want for strictly economic reasons to distinctly proclaim against consultation, in almost every case, as being one of the most damaging acts, as to financial returns, we can engage in, and in most instances, I believe it not best for the improvement of the sick. This side of the picture, however, I will not dwell on, as when a consultation is desired, it is usually because the confidence of the patient in the attending physician is more or less strained, making him in a very receptive mood, and thereby giving the consultant the opportunity, adroitly or otherwise, to injure the attending physician to an extent beyond repair; often to an extent that is far reaching. While it is a fact that this condition of affairs does not always result, yet too often it does prevail, and viewing this from an economic point, together with the fact that it is mostly unattended with any good to the patient, I am very forcibly impressed with the belief that we should take a dignified and persistent stand against it. If, as in some cases, there seems to be a reasonable demand for a consultation, have it if possible with a man who lives at least one hundred miles distant, and, sooner than submit to a consultation where it is believed to be unnecessary, relinquish the patient in a graceful and manly manner. You will at least retain the respect of the family to whom the patient belongs; you will be able to respect yourself, which is quite often a very happy feeling; and you will be nearly sure to avoid receiving a wound which neither silence nor time can erase.

Competition has been and now is most keen in our profession, made so by the mad desire for money of those who are desirous of leading a life far too extravagant for their incomes. The wish on the part of too many of us, to imitate the wealthy and to associate with them, makes the life of those who do, rather unbearable and undesirable. How much better it would be for us all if we could, at all times, act squarely with each other, and not try to secure the patronage of people who, if left without solicitation, would go of their own accord to the physician of their choice. This severe competition is largely due to less sickness, by reason of preventive medicine, and to the number of physicians being in excess of the present demand. I believe, however that very soon the pendulum is going to swing in the opposite direction. The temptation to study medicine is no longer so great as it was, since the time and expense of a medical education is so extensive that fewer each year are willing to grasp for the life of a physician. I firmly believe that inside of the next ten years, there will be a scarcity of physicians, instead of too many.

It now requires eight years to obtain a first-class medical education, after having graduated at the home high school. Then, with all this training, the physician must open an office and at once enter into competition with all kinds of irregulars, some of whom now hold, as it were, complimentary certificates, licensing them to go on in their damaging work. This last move of the medical board of licensure is, in my opinion, a very weak one, as, instead of ignoring them, this complimentary certificate gives them a semblance of right and respectability in the eyes of the public. The board does hold out the inducement to the profession, however, that in case any of them abuse their privileges, their licenses will be revoked; nevertheless, I fear we will not realize any help in this direction. I believe it is the duty of every practicing physician, to give all the help he can to the president of the board of licensure, Dr. Baldy, and we can do this by carefully watching to see that no new drugless healers, and their ilk, start from this time. If we report any such to Dr. Baldy, I believe he will promptly deal with them according to law, a proceeding which will soon thin out the ranks of these irregulars.

At this point I wish very earnestly to call the attention of the profession, now within my hearing, to the urgent need of more uniformity in our charges for the different requirements for our services. The surgeon, as a rule commands a fee at this time of about $250 for an abdominal operation, minor surgery being in proportion. The physician on internal medicine, as an instance, receives a fee of from $50 to $100 for attending a patient with typhoid fever or pneumonia, the disease lasting, say, from four to ten weeks on an average. This requires ability and perseverance, also causes worry and anxiety far in excess of that required by the surgeon to attain like results, granting that in each case the services are meritorious. I believe that at this time, the country over, the surgeon is receiving comparatively larger fees than the physician.

I would be remiss in speaking on medical economics, if I did not give cognizance to the side of the subject that pertains directly to a square deal to our patients, namely to give those who are entrusting their lives to us, the best possible services followed by a just charge. This can be done only by our being alert and in earnest. Few practicing physicians exist who can not do this, but any inefficient treatment is I believe due mostly to a want of being serious, attentive and keeping our minds absolutely on our work; and at all times severing, or rather standing aloof from all other interests. This I believe is imperative in the life of a physician. I am of the opinion that you will all agree with me in saying that the day is here when it is a legitimate demand on every physician to give to the sick competent services, whether medical or surgical. I say this unmodifiedly because of the thorough teaching which is within the reach of us all. We have at hand at all times the great assistance of the many textbooks and medical journals that are efficient to a degree that is certainly highly satisfactory. I can not say more without giving special mention to our wonderful *Journal of the American Medical Association,* which is an instrument of education that is offering itself as a leader in thought, ethics, and as a general source of education in our profession that is surprisingly meritorious. Add to this our state journals, and we have a great library, and yet we have so many more that are most excellent, and all within our reach at a very moderate charge.

I do not want to pass on without giving notice to the good which accrues to us all by close affiliation with each other; the rubbing against each other, figuratively speaking, does much for us all. In my long experience I am very positive in my belief that I have learned more from my brother physicians, who are practicing medicine right in this city, than I have out of textbooks. I wish now to mention what I consider needs attention, and that is the disposition on the part of some physicians to be irregular in their charges to patients, making a very trifling charge to a patient who is well adapted to protect himself against imposition, when to one who can be frightened and deceived, he makes a charge in excess of the value of the services the patient has received. This is certainly reprehensible, and I believe that fewer would practice such an act if they were a little more considerate; thus adding to the dignity of our profession, instead of compromising it. I have knowledge of this kind of services being delivered.

As I have already said, medical and surgical incompetence is inexcusable at the present day of matured opportunity. When we, while enjoying the confidence of our patients, make mistakes and treat them for the wrong trouble, for so long a time that they possibly become incurable, we at least add to them an expense, and give nothing in return, which makes us guilty of a serious imposition. In evidence I want to cite briefly just a few cases.

Case 1. A good woman was told by her attendant that she only had indigestion and he would soon have her well and strong, but at the end of several months, being worse than at the beginning of treatment, she became discouraged and changed physicians. It was learned after an examination of the urine that she had an attack of diabetes, far advanced in severity, the patient being on the verge of coma. The first physician had been satisfied with his diagnosis of dyspepsia, and had not examined the urine.

Case 2. A woman was being treated for gallstones by a physician who urged an operation which was not agreeable to her. She at once changed her doctor, the second one telling her she had womb trouble, that he soon would cure her, and that had her first doctor given her the attention he gives to society he would have treated her more efficiently. As she steadily grew worse, she finally returned to her first doctor, and consented to the operation, when several good-sized stones were removed. The woman made a complete recovery, with the loss of some money and considerable time.

Case 3. A man with a good-sized family, on a salary of about $600 a year, who had perfect confidence in his attending physician, went to him for one year, once a week, paying the physician fifty cents for each office consultation and medicine. At each of these visits, including the first one, the doctor always felt his pulse, and looked at his tongue, and asked if his bowels were regular. This covered the consultation and the patient was told that he had indigestion and would soon be well. At the end of one year being worse than at the beginning, he changed to another physician, who, on a careful examination found that his patient responded to all the tests to show he had duodenal ulcer, sufficiently advanced to make his recovery very doubtful, at least without an operation.

Case 4. Patient being treated for floating kidney, for several months, became restless and sought the aid of another physician, who diagnosed pulmonary tuberculosis. The diagnosis being verified by three other physicians, the patient was sent to a tuberculosis sanatorium, but the trouble was too far advanced and the patient died of a large tubercular lung abscess.

Case 5. Patient being treated for several months for irritable bladder till the condition grew desperate, changed her counsel, and was told she had tubercular kidney and must have an operation. She consented, and at the time of operation tubercular trouble was found in kidney and bladder. The patient died.

Case 6. A patient being treated for nervousness, dyspepsia, and piles, after continuing treatment for several months, at a great expense and no relief, changed to a doctor who found unmistakable ulcer of colon. Patient now is much improved, and getting well.

Case 7. A patient being treated for nasal catarrh, for a period covering many months, without any improvement, was taken to Baltimore to see a so-called specialist, who diagnosed pulmonary tuberculosis. The patient was sent to a tuberculosis sanatorium, and there died because of the advanced condition reached while being treated for nasal catarrh.

These cases go to show that many are being treated in a manner that is proof that patients are not all getting a square deal in medical economics, to say nothing of the unnecessary loss of life. To observe medical economics as pertaining to both ourselves and our patients, we must be more in earnest and alert; we have the means and the ability, let us use them.

In concluding my paper I feel that I must give some notice briefly to lodge practice, as the growing evil, as it is certainly an economic problem and should be driven from every community by the strong voice of a united profession. I fully appreciate the claim made by those practicing this imposition, that they would not do so could they support their families without it. They give no heed to the fact that they are robbing a brother physician of patients who prefer him, and whose patronage he needs for his family support just as much as the first named. In indulging in this pauperizing practice, the physician works very hard himself. If this energy were utilized in a direction of perfect attention to the legitimate work he does have, the doctor could atone for the loss he would sustain by severing himself from lodge work. I believe where this growing evil is continuing it is the duty of the profession to withdraw all recognition from the transgressors, and force them into the companionship of the "man without a country."

THE RELATIONSHIP OF THE CONSULTANT TO THE PRACTITIONER.

BY JULIUS H. COMROE, A.M., M.D.,
Physician to the York Hospital, York.

(Read before the York County Medical Society, December 3, 1914.

It would seem almost parodoxical to discuss before an intelligent body of physicians the proper interrelationship that should exist between the consultant and the practitioner, and yet, if experience and personal knowledge may be offered as evidence, there seems to be sufficient cause why this topic should be presented for your consideration and criticism.

Generally speaking, a consultation, more liberally considered, is sought by one of three more or less specific methods. In the first place, and this constitutes by far the largest classification, we have the usual consultation at the "bedside," more frequently requested by the patient or his relatives and friends, but ofttimes suggested and even urged by the attending physician. The next group, which seems to be larger than is generally realized, constitutes the consultation with a physician or surgeon in some neighboring or distant community, and is carried on in the presence of the family physician, or in his absence but with his knowledge and at his request; but also, in many instances, without his knowledge or suggestion. And, finally, we have the consultation, if I may be permitted to be somewhat elastic, whereby the patient enters an institution, be it a hospital or a sanatorium, for either diagnosis or treatment, or both, and which is, in most cases, carried on with a thorough understanding of the attending doctor.

Although there are instances where not only a breach of ethics but even material injury to the family physician (largely unintentional, but nevertheless damaging) are engendered by consultations at the bedside, the most frequent and serious harm is produced by consultations of the two last-named varieties, and, especially so in the absence or ignorance of the regular attendant. It must be admitted, however, that in these latter instances, the injustice produced is usually brought about unwillfully, and is due more particularly to the psychic effect of the awe-inspiring surroundings and the multitudinous, and ofttimes unnecessary, physical and clinical examinations which had not been previously made by the "family doctor," and the omission of which is ofttimes registered as a protest against both his ability and his thoroughness. And this stigma is unfortunately reinforced, at times, by some such casual remark from the consultant, as: "Of course, it would be impossible to make a diagnosis accurately without these exhaustive examinations," or some similar encouraging (?) expression, which invariably leads your patient to feel that your usefulness is very limited indeed, and even causes him to sympathize with your shortcomings. It is against this injustice, although in the vast majority of instances there is no doubt a sincerity of motive, that I wish to enter a word of protest in defense of the family physician, whose rights and interests should be preserved against any form of unjust intrusion. There can be no criticism offered against the making of most exhaustive and even unusual physical and clinical examinations if they are absolutely required in any given case to make or substantiate a diagnosis, but it is manifestly unfair to subject such a patient to unnecessary examinations simply because a certain fixed routine must be followed, provided, I repeat with emphasis, that such may not be absolutely required. To illustrate: There is no justification of bismuth meal x-ray studies of the gastrointestinal tract in a patient considerably past middle life, clearly presenting all the cardinal symptoms, both subjective and objective, of inoperable carcinoma of the stomach, as such a procedure, although it may locate more definitely the point of obstruction, would ofttimes precipitate criticism against the family doctor for gross neglect and inefficiency. It is is just as unfair as it is unnecessary to insist upon a Wassermann reaction in an undeniable, indisputable case of active lues, simply to impress upon the patient the fact that the family physician is not fully equipped to carry out certain diagnostic examinations, which, by inference, ofttimes reflects deleteriously upon his ability to treat these cases intelligently. It is unfortunately true that too often the patient is subjected to physical and clinical examinations that are absolutely superfluous to the discovery of both the immediate and remote cause of the disease, in order that the consultant can justify and emphasize his lofty position and thus innocently impress the patient with the fact that he is the final court of appeal, to which the patients of the family physician must eventually come.

No attempt is being made to elaborate upon this phase of the subject, as there is very little doubt that more specific exemplifications of this evil practice could be detailed by many of you. The distant consultant should at all times avoid any unnecessary inquiries and examinations, and remember that through the misinterpretation or misunderstanding of the patient, the family doctor usually has more at stake than he. In this connection, it might be added that his statements to the patient (if such be made) should be most explicit and should also correspond in every minute detail with the communication he refers to the physician in charge. It is manifestly unjust for him to dismiss the client with some such suggestive statement as: "I will write to your doctor, telling him exactly what your trouble is, and will also fully explain the treatment to him," especially so if there is no radical change in the diagnosis or treatment. I say "radical" advisedly, because it too often happens that unwarranted or trifling changes are suggested which have the desired psychic effect upon the patient and give him apparent cause to believe that the new (?) treatment is not only curative or helpful, but that he might have fared better had the new (?) treatment been suggested earlier. He should most carefully refrain from the use of meaningless or ambiguous terms. Thus, I am informed, that a most prominent clinician in Philadelphia, now deceased, told a patient that he had a large amount of phosphates in his urine, and the patient felt indignant that his own physician had not discovered this "disease." On another occasion, one of the most widely known clinicians in Baltimore informed a patient that he was suffering from stenocardia and employed the same term in writing to the family physician, and it required some further written explanations from the consultant to convince this patient that the term was synonymous with angina pectoris, for which he knew he was being treated by his own physician.

It would be manifestly unreasonable to expect the consultant deliberately to deceive a patient when he has found the diagnosis or treatment, or both, to be at variance with his own findings and views and even detrimental to the welfare of the patient, but in many instances, it is not what he says, but rather how he says it. On the other hand, it is to be expected that the attending physician be accorded full and impartial credit for what he has done, and that nothing be done or said, either directly or by inference, that will subtract from or minimize his fitness.

As previously stated, consultation at the bedside constitutes the type of conference that the family physician most frequently experiences. A request for such a consultation does not necessarily involve a want of confidence in you (indeed, it may be, at times, a delicate manner of dividing or removing a responsibility) and such requests should never be refused; in fact, they should more frequently be encouraged when actually necessary. At this juncture, it might be stated that there has been much discussion, pro and con, as to the exact position the family physician should take in the selection of the consultant. The family, primarily, has the sole privilege of suggesting or even demanding its own selection and, in such cases, the attending physician must either submit or retire. In fact, it is usually of more benefit to the regular attendant to encourage the client's own selection, as such a procedure would encourage his belief (which unfortunately requires encouragement at times) in the attendant's impartiality and reduce to a minimum his suspicions that the opinions rendered will be influenced by the selection. On the other hand, there are occasions when the regular attendant is requested either to select or to suggest the most desirable consultant for the case under consideration, or when he, for various reasons, deems it most wise to volunteer or change a selection. In these instances, the welfare of the patient should be the first and only consideration, and it is ofttimes wise to submit several names for their approval. The selection is at times influenced by the consultation fee the family can pay, and this matter should always be given its deserved consideration.

During a bedside consultation, there are at least two facts that should be constantly borne in mind; *viz.*, that the family physician is not being submitted to an examination and that the consultant has not been engaged to exhibit his complete armamentarium and all of his superior accomplishments. The benefit to be derived by the patient is the prime object of the meeting, and the consultant should learn all that he desires, either by inquiry or examination, to further this aim, remembering always that no statement or examination shall even by inference reflect upon the ability of or stimulate a harmful criticism toward the family physician. Any necessary examination, either physical or clinical, may be made, provided that it will be of material benefit to the patient, but such examinations should not be encouraged, for the mere satisfaction of personal desires, inasmuch as they may, and do, react upon the attending physician's ability and thoroughness. Thus, in a case of lobar pneumonia with moderate abdominal distention, in a child, a consultant insisted upon taking a number of blood smears, simply because he was personally interested in the occasional coincidence of paratyphoid and pneumonia in children; although the family who witnessed the performance felt that such a procedure was simply the fulfillment of a neglect on the part of the family doctor. In the same case, the consultant urged the addition of Bulgara tablets to the treatment because, he hinted, the family would expect something from him.

This brings forward the important question of the presentation of the diagnosis and treatment to the patient, or his family. In this connection it has been wisely said, "Judge not thy associate until thou hast come into his position." It is difficult to enumerate the many disadvantages under which the average general practitioner labors in his relationship to the widely known and respected consultant. Probably his greatest fears lie in the fact that he might have made some very radical error either in the diagnosis or treatment, or both, which will suddenly and dramatically be exposed or to the family and friends. The human family is particularly likely to err, and it is only just and proper that where a gross error has been discovered, the consultant should employ a maximum amount of tact and diplomacy to strengthen and not weaken the position of the attending physician in the family, without subtracting in the least from the welfare of the patient. More particularly, however, do I desire to emphasize the fact that the consultant must not feel that his visit has been in vain unless he has made some change either in the diagnosis or treatment, or both. He should realize that any change he may make, unless such be an absolute necessity, is quite frequently interpreted by the family as evidence of inefficiency on the part of the attending physician. It is a too common occurrence to hear from the laity such an assertion as, "Dr. ——— was called into consultation, and after he changed the treatment, the patient began to improve immediately," even though the "change" might simply have been from sodium bromid to potassium bromid, or from veronal to trional. Even where radical changes may be deemed necessary, a sincere explanation relative to the exact significance of the alteration in treatment will, in many cases, reassure the family that no neglect can be charged to the regular attendant. The consultant's motto should be to help not only the patient, but also the family doctor. And it is just as important for him to continue the protection of the attending physician after he has left the case, and not to indulge in any remarks or inferences to the family or friends that might be incompatible with his previous statements in the sick room.

Before closing, a note of warning should be sounded relative to the most important etiologic factor which gives rise to many needless consultations, and their associated anxieties. It has been stated that an investigation conducted by a New York hospital recently disclosed the fact that large numbers of patients had never had their outer garments unbuttoned when the attending physician undertook to make the diagnosis. This condition of affairs, if true in one of the centers of medical science, may doubtless be duplicated elsewhere. Thus many patients wander from office to office seeking relief when, if the very first physician in charge had gone carefully into every detail of the case, and had made a complete physical examination, all this might have been avoided, and a disease in its incipiency checked or cured. Many practitioners apologize for lack of laboratory facilities, lack of special aids in diagnosis, remoteness from medical centers, etc., and thus attempt to excuse a failure. Sometimes, such an apology is justifiable, but a good history of a case, plus a real *bona fide* physical examination of the patient, will go far to clear up a multitude of obscure diagnoses, and decrease the already too many anxious moments of the general practitioner.

SEE PROGRAM

PHILADELPHIA SESSION,

September 20-23,

in this issue.

THE TREATMENT OF ECLAMPSIA.

BY C. G. STRICKLAND, A.B., M.D., F.A.C.S.,
Obstetrician to Hamot and St. Vincent's Hospitals,
Erie.

(Read before the Erie County Medical Society, February 2, 1915.)

Eclampsia is one of the gravest complications of obstetrical work; grave because of our incomplete knowledge of its etiology, graver for our lack of a generally accepted view as to the best method of treatment, gravest because of the death rate for mother and child.

As in so many other conditions, the best treatment in eclampsia is the prophylactic, and the method of obtaining this is, of course, by the close and continuous scrutiny of elimination during the whole period of pregnancy. To get results we must impress upon our patients the importance of the daily complete and thorough bowel movement; we must continually drive home the necessity of drinking at least two quarts of water a day; and, above all else, we must gain the hearty and untiring coöperation of our patients or our efforts of necessity will fail. The urine should be examined and the blood pressure taken at least once a month up to the sixth month and every two weeks thereafter. From the latter period, the twenty-four hour urine should be measured at least every two weeks, as the total amount passed is an additional check on the degree of elimination. The patient should be instructed and encouraged to report at once persistent headache, vomiting in the latter months of pregnancy, disturbances of vision, reduction in the amount of urine, or swelling of the hands or face.

It has been said that an eclamptic seizure means either a careless doctor or an ignorant or slothful patient. From personal experience I know that eclampsia may occur when the obstetrician has been most painstaking and the patient most faithful in her efforts to follow instructions. I do feel, however, that intelligent coöperation between physician and patient throughout pregnancy should greatly reduce the frequency of eclampsia.

Neither albumin in the urine of a pregnant patient nor a blood pressure above 150 mm. necessarily predicts an oncoming eclamptic seizure, but either does demand greater watchfulness and shows the need of a closer inquiry into, and a regulation of, the diet, rest, and elimination of the patient.

When in spite of treatment the albumin and the blood pressure increase, or, when these are emphasized by the addition of toxic symptoms, the induction of labor must be considered. Cases must of necessity be individualized. General rules will not obtain.

What then if a convulsive seizure ensues? I confess that I do not hold with those who would content themselves with sedative and eliminative measures when brought face to face with this emergency. Out of our various theories of eclampsia one fact may be safely claimed, no pregnancy, no eclampsia; or, in other words, eclampsia is a condition peculiar to pregnancy. I believe we can go further and define eclampsia as a toxemia due to the overwhelming of the maternal organism by toxins having their origin in some part of the ovum. If this be so, why content ourselves alone with eliminative measures? Does not the proper treatment of any intoxication necessarily include, where possible, the removal of the primary focus? Our first thought in food intoxication or drug poisoning is to stop further absorption. Why then in a pregnancy poisoning should our mind not turn in a similar direction?

To satisfy, a method of treatment must be capable of logical explanation. In the light of the present-day knowledge, or lack of it, the prompt evacuation of the pregnant uterus, once an eclamptic convulsion has occurred, seems to be logical, and the eliminative and sedative treatment, which would for the time ignore pregnancy, does not.

I am aware that a pregnant woman may have an eclamptic seizure, recover under eliminative treatment, and after some days or weeks procede to an uncomplicated delivery. I believe, however, that such is not the ordinary course. Neither is such a case any more convincing of the correctness of the treatment adopted than is the recovery of a patient with appendicitis who was not operated on proof that appendicitis should be treated medically.

We know that the mortality of puerperal eclampsia is less that that which occurs in the eclampsia of the undelivered. Why? I believe that the best treatment of an eclamptic convulsion must include the prompt delivery, no matter what the stage of pregnancy. If, for the sake of argument, this is permitted me, what method of delivery should be followed? Again we must individualize our cases. If the cervix is well dilated, deliver with forceps or version according as the fetal head is, or is not, engaged. If the cervix is only partly dilated, multiple incisions are indicated followed by delivery as before mentioned. If the cervix is unshortened and undilated, deliver by vaginal Cesarean section in the early months, by abdominal Cesarean in the last two months.

Rapid delivery in the face of an undilated, unobliterated cervix has proven embarrassing to me in the past. Some experience in the manual and instrumental dilatation convinced me that this method was unsatisfactory and I turned to the abdominal Cesarean section in the hope of bettering my end results.

I desire to submit herewith a brief report of three cases so treated.

Case 1. Josephine B., aged twenty-one, a primipara at term, had been well up to night before admission, when she suffered with severe headache. First convulsion occurred at 8 A.M., September 15, 1913. She was admitted to hospital at 10:30 A.M. in comatose condition with cervix undilated and unshortened. Blood pressure was 200; albumin +++; fetal heart sounds +. While on the way to operating room 11:30 A.M. she had her second convulsion. Cesarean section was performed and a living child delivered. Mother and child were discharged well three and a half weeks later.

Case 2. Kate O., aged eighteen, a primipara at term, had first convulsion 6 A.M. on day of admission, April 7, 1914. At 9 A.M. she was relatively bright mentally; no edema; blood pressure, 190; albumin ++. She was put on eliminative treatment. She had five convulsions between admission and Cesarean section at 1:20 P.M. Cervix was undilated and unshortened; fetal heart sounds +. Living child weighing eight pounds was delivered. Mother developed lobar pneumonia on the fifth day and on the fourteenth a breast abscess had to be opened. Patient and babe were discharged well, six weeks after admission.

Case 3. Mrs. A. S., aged thirty-five, was in her third pregnancy. She had had puerperal eclampsia in second pregnancy and began to show toxic symptoms this time on December 15, 1914; in spite of active eliminative treatment she had a convulsion at 2:15 A.M. on December 28, when four weeks short of term. Cervix was unshortened, admitted one finger. Blood pressure was 190; albumin +++; fetal heart sounds +. A Cesarean section was done at 4 A.M. and a living child delivered. Mother and babe were discharged from hospital four weeks later.

In none of these cases did a convulsion occur after delivery. One point I should like to make is that all of these patients bled freely at the time of operation, more so than is customary in a Cesarean section done for other conditions. A Cesarean thus combines the advantages of a rapid, clean delivery of minimum shock to mother and child with the therapeutic efficiency of phlebotomy.

I realize that the outcome in these three cases establishes nothing beyond the fact that I have been fortunate, and yet it has taught me a greater confidence in this than in any other method I have yet employed, and I shall continue for the present to use it.

To obtain good results with the Cesarean section in eclampsia, Peterson's point, that in these cases operation must be performed promptly after the first convulsion, should be observed. He argues that delay here lessens the chance of recovery just as does delay in acute appendicitis. Finally, in the treatment of puerperal eclampsia, the most effective single method in my hands has been phlebotomy.

SPORADIC ELEPHANTIASIS; TREATMENT OF A CASE WITH THE EXTRACT OF THYROID; DERANGEMENT OF INTERNAL SECRETIONS ADVANCED AS A CAUSE OF THE DISEASE.

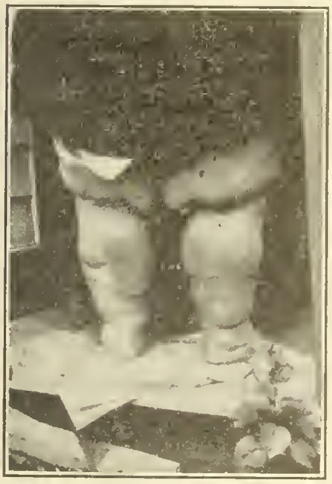
BY GEORGE C. DAVIS, A.B., M.D.,
Milton.

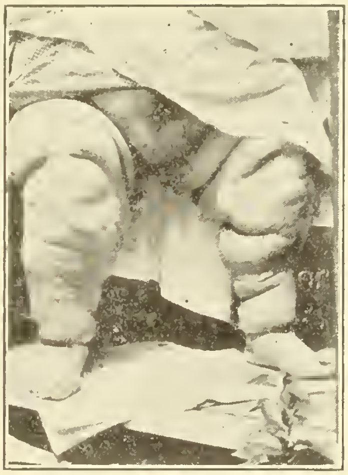
(Read before Lycoming County Society, Williamsport, November 13, 1914.)

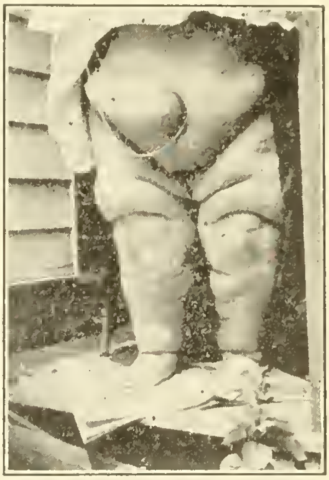
In 1900, C. C. Mapes and F. K. Green of Louisville, Ky., reported a series of five cases of elephantiasis, all seen in Kentucky and all in negroes. This is the largest series of cases which has come to my notice, excepting of course those reported from tropical countries where the disease is endemic. It is not my purpose in this article to take up in detail the etiology, pathology and symptoms of the disease, but rather to advance a theory, explaining its causation, and to present a case which has come under my observation in central Pennsylvania, a case which may be regarded as remarkable in view of the universal involvement, almost the entire body being affected. In only one of the five cases reported by Drs. Mapes and Green was this general involvement observed. For the sake of comparison their case is here given:—

"Negress, aged fifty-two years, was a native of Kentucky, in good health. There was elephantous enlargement of almost the entire body. Height was about five feet; weight, 468 pounds. She is still living (1900), and remains well physically, notwithstanding the enormous hypertrophy."

On July 21, 1913, I was called in consultation with another physician to see a case regarded as one of extreme obesity. Numerous previous consultations had been held and numerous treatments, principally eliminative in character, had been instituted, all without effect. The history of the case is as follows:—


Posterior view; standing.


Anterior view; sitting.


Anterior view; standing.

Patient was fifty-eight years of age, a farmer's wife, and a native of Pennsylvania, where she had spent her entire life. The family history is negative, except that one brother died from Addison's disease at the age of forty-one. Patient was married for the first time five years before. The present illness began, as near as she could tell, about the time of her marriage when her normal weight was about 220 pounds. She had had, at no time, any symptoms other than a steady increase in weight; this increase within the past few weeks had become alarmingly rapid, ten to fifteen pounds per week.

Examination, July 21, 1913: Patient was suffering principally from inability of locomotion, due entirely to her enormous size and weight. She was five feet and two inches in height, and had not been weighed for two weeks when her weight was 448 pounds. She was so discouraged that she had since refused to be weighed. Judging from her rate of increase during the past few weeks, her weight must then have been close to 470 pounds. I regret that we were unable to obtain photographs at that time, but the patient was sensitive and would not grant this request, though she did consent a year later. She was confined to a specially constructed chair, where she ate and slept.

On inspection we found enormous enlargement of the legs, thighs, abdomen and tissues of the upper arms. The tissues of the forearms and hands were puffy but not markedly affected by the general process, while the thyroid region, the breasts and the genitalia were peculiarly immune. The skin and subcutaneous tissues were markedly thickened and hypertrophied and of a rugose character, pitted in places. The tissues of the legs hung in enormous folds and were of a peculiar bluish pigmentation and covered by a pearly scale. The thighs were enormously enlarged and the tissues very dense, but the pigmentation there was absent. Palpation of the abdomen gave one the impression of touching the hide of a pachyderm. Note particularly in the illustrations the marked hypertrophy of the navel, which I may say without exaggeration was not out of proportion to the other involved structures. The heart and lungs were normal; the circulation, good. There were no glandular enlargements. The blood examination was negative, the urine negative.

I have presented this case, not so much as a pathological curiosity, but rather as an example of what may sometimes be accomplished by drug therapy in an apparently hopeless case.

It was noted in the above examination that the thyroid, mammary and genital regions remained unaffected. On this observation the administration of thyroid extract suggested itself and was advised, for it was noted that the patient did not have even a normal fullness in the thyroid region. She was accordingly placed on thirty-five to fifty grains of thyroid extract daily, and carefully observed by her attending physician. Six weeks later, owing to the death of her physician, I was asked to attend her. I saw her on September 11. From July 21, when the treatment was begun, to September 11 she had lost something over thirty-eight pounds, then weighing (September 11) 410 pounds. From September 11 to October 2, without any increase in dosage, she lost eighty-nine pounds, an average daily loss of almost four and one quarter pounds. The scales then registered 321 pounds. Her blood pressure, which had been somewhat elevated, had returned to normal, her abdomen had decreased in size remarkably, and had softened noticeably, while similar effects were noted in the limbs.

The only therapeutic effects of the thyroid extract noted were the rapid decrease in size and weight, and a marked diuresis, the latter no doubt being due to increased metabolism. No untoward effects were observed at any time on either the circulatory or nervous systems. The dosage of thyroid after this rapid loss of weight was reduced from fifty grains per day to twenty grains per day. The patient from October 2 to October 25 lost but three pounds. The thyroid was then increased in dosage but no additional loss in weight resulted. The patient for one year maintained a practically constant weight, about 320 pounds, during which time she has been under little or no treatment. Since first seen her diet has never been restricted or altered in any way. The only other drug given was quinin sulphate which, for a few weeks, was administered along with the thyroid extract, in two grain doses, four times daily. Two months of thyroid administration enabled the patient to walk about the house, and it was not long before she was able to attend to the lighter household duties. During the last six months she has been taking automobile rides regularly. She is now able to go up and down stairs unassisted.

It is to be noted that the accompanying illustrations were made after the patient had lost one hundred and thirty pounds, which will give some idea of her condition when first seen.

At this point the question naturally arises: Was the employment of thyroid extract in this case rational therapy? An answer to this question involves one in a discussion of the etiology of the disease, without which the presentation of this case seems incomplete.

The cause of elephantiasis is generally ascribed to the *Filaria sanguinis hominis* circulating in and obstructing the blood and lymph systems, and in some instances to the streptococcus of erysipelas. While the filaria may be found in the blood and lymph of cases occurring in the tropics, the parasite has not been conclusively demonstrated to be the cause of the disease. Whatever may be the cause in the tropics, this organism has never to my knowledge been found in sporadic cases occurring in temperate climates, it therefore can not be counted a cause in these latter cases. As for the streptococcus of erysipelas, I do not believe it is to be seriously considered in the true form of the disease. The fact is that in the tropics, while the filaria is known to be disseminated through the medium of the mosquito, one member of the family will be attacked by the disease, while other members living under identical conditions remain exempt. Natives of the Samoan Islands attribute the disease to sudden chilling of the feet and legs, due to their frequent fording of cold streams. This theory is scarcely tenable. Marked vascular and lymphatic obstruction has been said to exist in elephantiasis, as a result of which we should expect poor nutrition with resulting atrophy of the parts. This however is not the case, for hypertrophy is the all-impressive feature. Were obstructions to exist we should in the natural course of events look for serous effusions, sloughs, gangrene, *et cetera.* Such is not the case so far as I can learn. We must therefore look for some other cause in this disease.

The results of organotherapy in the case reported have been so brilliant, and since the action of the thyroid has, I dare say, in this case been almost specific, the cause of elephantiasis may be explained by a disturbance of one or several of the internal secretions. In advancing this theory I am fully aware that enthusiasm in this branch of therapy has carried many beyond the limits of rationalism. Some have gone so far as to explain every disease which can not be explained in any other way by the "internal secretion theory." It might further be said that it is poor reasoning to draw any conclusions from results obtained in a single case; but in forming these conclusions, while it is admitted this one case is the basis, other diseases, which seem to me in a way to present similar characteristics and of which the cause has been pretty conclusively demonstrated, have been utilized in this theory of the causation of elephantiasis. Moreover, we can not argue from fifty cases when we have seen but one.

Attention is first called to the condition myxedema. A degeneration or atrophy of the thyroid gland has been absolutely proved to be the causative factor, and thyroid therapy is regarded as specific in these cases. The characteristic symptoms in this disease are limited to tissue changes, principally of two organs, the thyroid gland and the skin. In the autopsy reports of thirty-six cases of myxedema, collected by Ewald of Berlin, ninety-five per cent. showed atrophy of the thyroid gland, which remained only as a shrunken structure of hard, fibrous consistence. Thus we see in this condition that decreased function of the thyroid has produced changes in the cutaneous structures of a hypertrophic nature. Under the administration of thyroid in these cases of myxedema the patients exhibit rapid improvement, while withdrawal of treatment sees a return of symptoms.

We can not close this discussion without reference to another of the ductless glands, one which for some time has been known to have to do with the structural growth of the body, namely, the pituitary gland; and with it we at once associate the pathologic condition, acromegaly. The thyroid and pituitary are known to be related both structurally and functionally, the atrophy of one causing hypertrophy of the other. For example, operative removal of the thyroid has produced an hypertrophy of the anterior lobe of the hypophysis; and likewise in myxedema this enlargement of the hypophysis has been demonstrated along with thyroid atrophy. Schoenemann studied the hypophyses of patients dying in goiter districts and in a large percentage found degenerative changes in the hypophysis. In this relation it is interesting to contrast the delicately tapered fingers of the patient with Graves' disease with the blunt fingers of the acromegalic. We naturally conclude that the two glands have a complementary relation, the secretion of the one either inhibiting or neutralizing that of the other, just such a relation which has at times been shown to exist between the sex glands and the suprarenals.

At this point it might be well to mention a relation existing between the ovaries and the hypophysis, some observers having noted hypertrophy of the hypophysis following oöphorectomies. As a familiar illustration of this relation we might cite the increased body growth in some animals following castration. In the case reported the onset of the disease was coincident with or followed closely upon the menopause, indicating a vicarious function of the hypophysis on the cessation of ovarian activity. Every physician has noted often the temporary enlargement of the thyroid in females at puberty and during menstruation and pregnancy. From this it may be inferred that both the thyroid and ovaries have a complementary or antagonistic action upon the hypophysis. Symptoms of acromegaly have been observed during pregnancy, only to disappear after delivery. Very recently there has been reported a case of acromegaly developing after castration.

Benda of Berlin has emphasized the fact that in acromegaly the deformities in the extremities are due to an hypertrophy of the soft parts, the bones enlarging secondarily. The various layers of the skin thicken, as does the connective tissue in the muscles. Chief interest in the pathology of acromegaly centers on the hypophysis, the enlargements of which vary in size from that of a cherry to that of an apple, the process always involving the anterior lobe of the gland. That acromegaly and giantism are due to hyperactivity of the gland is to be inferred from the fact that administration of pituitary extract aggravates the condition, whereas were hypoactivity of the gland responsible we should expect improvement under organotherapy. The true nature of acromegaly has been described by Erb as a tumorlike formation in the connective tissue which resembles that of elephantiasis and also myxedema.

In conclusion, then, we may regard myxedema, acromegaly and elephantiasis as having something in common, an abnormality in one or all of the internal secretions. In myxedema the thyroid is at fault; in acromegaly the hypophysis is affected; and in elephantiasis, the suggestion may be logically made, both the thyroid and hypophysis are concerned, a deficiency in the former being accompanied by a hyperactivity in the latter. The artificial substitution of thyroid would then, in the light of experimental observations, be expected to bring about a balance or normal relation of the two systems. In other words the administration of thyroid extract would make up the deficiency in thyroid secretion and at the same time by its mere presence in the system would exhibit an inhibitory action on the hypophysis, or exert a neutralizing effect on the products of that gland. This theory is borne out by the results in the case which has been reported. All three diseases run an essentially chronic course, and all three produce tissue hyperplasia.

Thyroid extract has been advocated and used in many chronic skin diseases with benefit. It is regarded as a specific in myxedema. Hypophysial extracts are contraindicated in acromegaly, as thyroid extract is contraindicated in Graves' disease. Thyroid has in some cases of acromegaly given good results, likely for the same reasons it has produced marked beneficial effects in a case of elephantiasis.

It has been said that rational organotherapy has usually been productive of brilliant results, while the empiric has nearly always failed. I trust some one will in the future use the extract of thyroid in elephantiasis, a condition so long looked upon as hopeless, and which, it seems to me, bears a definite pathological relation to the other two hypertrophic processes mentioned, myxedema and acromegaly.

NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS PUBLICATIONS.*

NO. 5. WHAT WOMEN'S CLUBS AND NURSING ORGANIZATIONS CAN DO TO PREVENT BLINDNESS.

IT IS ESTIMATED THAT 50 PER CENT. OF ALL BLINDNESS IS PREVENTABLE.

This statement will be surprising to many—that one-half of the sightless people in this country need not have been blind had proper care been given to their eyes. But it has long been known by those endeavoring to prevent unnecessary blindness that more than a quarter of the pupils in the schools for the blind are sightless because their eyes were not properly treated during the first few days of life; that poor midwives are in part responsible for this tragedy; that children become totally or partially blind from neglected "sore" and "weak" eyes, and from neglect after attacks of such infectious diseases as measles, scarlet fever, etc.; that progressive nearsightedness among children may cause total or partial blindness if neglected; that household and industrial accidents cause the loss of many eyes; that drinking wood alcohol or inhaling its fumes in close places causes both blindness and death; that inadequate lighting and glaring surfaces are responsible for much visual disturbance, including eye-strain; and that eye-strain is a frequent cause of both mental and physical inefficiency.

Visiting nurse organizations and women's clubs, working independently or, better still, together, can perform valuable service in the elimination of these causes, thereby saving babies, children and adults from lifelong blindness.

"BABIES' SORE EYES" (*Ophthalmia Neonatorum*).

This disease, which causes so much blindness, is preventable and, if taken in time, is curable.

The prevention of blindness from babies' sore eyes is accomplished through the routine use of one per cent. solution of silver nitrate, or some such prophylactic, in all infants' eyes immediately after birth, and by prompt and skillful treatment of babies' eyes when they become red, swollen and discharging, whether or not a prophylactic has been used.

1. Does the birth certificate used in your locality include the question, "What preventive did you use for ophthalmia neonatorum? If none, state the reason therefor."
2. Are prophylactic outfits distributed gratuitously by your Health Officer to doctors and midwives?
3. Are doctors, midwives and parents required to report to the Health Officer, within six hours, redness, swelling or discharge from the eyes of infants in their care who are under three weeks of age?
4. Is this reporting law printed on the birth certificate—thus acting as a constant reminder?
5. Has the Department of Health a nurse in its employ, or does it so coöperate with a nursing organization that it may send a nurse at once to visit each reported case and secure adequate medical or hospital treatment for uncared-for cases?
6. Are there such hospital facilities for the care of babies' sore eyes that the Health Officer may send an infant to a hospital without delay if the eyes are in a serious condition?

Take these points up with your Health Officer, interested oculists and obstetricians, and don't rest until they are all attended to. Make it your business to see that any baby suffering from sore eyes, of which you have knowledge, is given prompt and adequate medical attention.

Try to have at least one nurse in the community for eye work exclusively, and see that there are hospital facilities for treatment of severe cases of babies' sore eyes.

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*Copies of the leaflet can be secured by addressing the Secretary, National Committee for the Prevention of Blindness, 130 East 22d St., New York City.

MIDWIVES.

These women attend about half the births occurring in this country, and the majority of them are dirty, ignorant and generally unfit to assume the care of mothers and babies. Although the carelessness of many physicians is equally reprehensible, it is due in great measure to the ignorance and neglect on the part of midwives that many babies become blind from babies' sore eyes.

1. Are there midwives practicing in your community?
2. Are they registered by an official body?
3. Is it required that they be adequately trained; pass an examination; obtain a license; and register before beginning to practice?
4. Has your community a midwife training school connected with a good hospital?
5. Do the practicing midwives give clean, careful nursing care to mother and child, and instruction to the mother concerning hygiene of pregnancy and care of her child?
6. Has the State or City Health Department adopted rules regulating midwives' practice in detail and requiring them to summon a physician in all but normal cases?
7. Are there inspectors to enforce the rules and give helpful advice to the midwives.

Make it your business to find out about this, for the sake of the mothers and babies. Your Board of Health is the proper body to have control of midwives. The Board of Education should regulate their training and licensure.

EYESIGHT OF SCHOOL-CHILDREN.

Many normal children seem backward because they have sore eyes or defective vision. Failure to correct these defects will probably mean continued retardation for many of the children, and inability to reach their highest possible mental and physical development and economic efficiency. Continued neglect may result in partial or total blindness.

1. Are all class-rooms in your schools adequately lighted?
2. Are the blackboards and tops of the desks lusterless?
3. Are all of the desks adjustable?
4. Are the children's eyes carefully and regularly examined for nearsightedness and other visual defects, and for various kinds of "sore" eyes?
5. Is this done by an oculist?
6. Are there clinics where school-children with "sore" or "weak" eyes may be treated?
7. Is there provision for furnishing eye-glasses to indigent children who need them?
8. Are common towels allowed in your schools? (They spread eye diseases.)
9. Are the children taught how to take care of their eyes?

Improving the eyesight and general surroundings of school-children will be of immediate benefit to them, and will increase their chances for enjoying health and prosperity later in life.

Talk to your Board of Education about this—it is important. The children can't do it themselves.

INDUSTRIAL ACCIDENTS.

Many good workmen are seriously handicapped and even become public charges as a result of losing one or both eyes in an accident that might have been prevented. Men, women and children often suffer from severe eye-strain because they are not provided with adequate light while at work.

1. Are workmen in the factories and shops in your locality protected from eye accidents by goggles; guards on emory wheels; screens to catch flying chips; guards on water gauges; etc.?
2. Are the factories, workshops and workrooms adequately lighted?
3. Are workmen examined to see that they are not especially liable to accidents because of defective vision?

Take these points up with your Department of Labor, Industrial Safety Commission, or some similar body.

The eyes are bread-winners and must be carefully guarded.

WOOD ALCOHOL.

Wood alcohol is a poison which may cause blindness or death if swallowed, or if its fumes are inhaled in an inadequately ventilated place.

1. Have you a law forbidding wood alcohol to be sold in any form without a poison label and warning?
2. Is the use of wood alcohol absolutely forbidden in beverages, medicines and toilet preparations.
3. Are your druggists, paint and varnish dealers, liquor dealers, grocers and barbers prosecuted for failure to comply with the above restrictions?
4. Is wood alcohol used in any of your local industries? If so, are employers required to protect their workmen from poisoning by providing adequate ventilation?

Your Board of Pharmacy, Department of Labor, Health Department and Commissioner of Excise have jurisdiction in this matter. Find out what they are doing about it. In the mean time, urge your druggists to give up the sale of wood alcohol, and urge your friends to use denatured alcohol instead. It is safer and cheaper than wood alcohol.

The National Committee for the Prevention of Blindness wants your help and coöperation in spreading the knowledge that much blindness is needless. It has data and information, lantern slides, exhibits and pamphlets on the various causes of unnecessary blindness and methods of prevention, and it is glad to share these with workers in all parts of the country.

In order to accomplish the ends suggested in the foregoing program, it is necessary to have official action, supported by public opinion. Try to have at least one big popular meeting annually under the joint auspices of the local Medical Society, the Health Officer, Superintendent of Schools, Y.M.C.A., women's clubs, nursing organizations and relief agencies. Arrange for talks before school children, mothers' clubs, etc., and secure as much newspaper publicity as possible. Write to the National Committee for suggestions and assistance.

The educational work must be sustained the effort unremitting

Ella L. Blair,
Chairman, Public Health Department, General Federation of Women's Clubs.
Carolyn C. Van Blarcom,
Chairman, Committee on Prevention of Blindness and Midwives, National Organization for Public Health Nursing,
Secretary, National Committee for the Prevention of Blindness, 130 East 22d Street, New York City.

PROPAGANDA FOR REFORM.

Sedobrol "Roche." Sedobrol (Hoffmann LaRoche Chemical Works) is stated to contain "17 grains sodium bromid, 1.5 grain common salt, fat and seasoning" and to furnish "on solution in hot water, a very palatable bouillon." The advertising "literature" advocates its use for stage fright and arteriosclerosis and recommends the use of a large dose of bromid in the guise of a cup of bouillon in many conditions. It is even recommended to use sedobrol in place of salt, simply to flavor food. The Council on Pharmacy and Chemistry held that sedobrol, Roche, was unscientific, that unwarranted therapeutic claims were made for it and that there was evident intention to mislead both patient and physician into useless and pernicious medication (*Jour. A. M. A.*, Jan. 2, 1915, p. 71).

Echtisia, Echthol and Echitone. Echtisia (Wm. S. Merrell Chemical Co.), echthol (Battle and Co.) and echitone (Strong, Cobb and Co.) are proprietaries, each of which has echinacea as its chief constituent. In 1909 the Council on Pharmacy and Chemistry reported that the extreme and extravagant claims which are made for this drug are not supported by evidence. Echinacea is not often prescribed under its own name but is commonly employed in the form of proprietaries which in addition to echinacea contain other little used or obsolete drugs. To call attention to the unwarranted and often absurd claims which are made for this class of mixtures the Council reports on three of these: Echtisia which is said to be made from echinacea, wild indigo, arbor vitæ and poke root; echthol, which is said to be made from echinacea and arbor vitæ; and echitone which is stated to represent echinacea, pansy and blue flag. In each case it was found that most or all the extravagant and impossible claims which have been made for echinacea were made for the proprietaries and that in addition almost equally extravagant claims were made for the additional drugs contained in them (*Jour. A. M. A.*, Jan. 2, 1915, p. 71).

Theobromin versus Caffein. Lester Taylor finds that caffein gives a moderate relief from the cardiac symptoms in myocardial insufficiency, but also causes the constant appearance of distressing nervous and gastric symptoms. He further finds that the clinical diuretic action of caffein may be better performed by large doses of theobromin sodium salicylate, N.N.R., without the unpleasant side-effects (*Arch. Int. Med.*, Dec., 1914, p. 769).

Neurosine (Dios Chemical Co.) is said to contain, in each fluidounce "bromid of potassium, C. P. 40 grains, bromid of sodium, C.P. 40 grains, bromid of ammonium, C.P. 40 grains, bromid of zinc 1 grain, extract lupulin 32 grains, cascara sagrada, fl. ex. 40 minims, extract henbane .075 grain, extract belladonna .075 grain, extract cannabis indica .60 grain, oil bitter almonds .060 grain, aromatic elixirs." No physician would think of prescribing all of the drugs in neurosine for any one condition. The Dios Company urges the use of this nostrum for a host of conditions and without due consideration of its potent constituents. Not content with recommending the promiscuous use of this already too complex mixture, the Dios Co. advises physicians to combine it with other drugs.

Germiletum (Dios Chemical Co.) is a member of a large class of alkaline antiseptics with excessively complex formulas. The formulas on different styles of germiletum labels and circulars vary so much that one can not tell what composition the exploiters of it intend to claim for their nostrum. Germiletum is recommended in many conditions and in a way to lead the physician to place false confidence in it.

Dioviburnia. According to the label every fluid ounce of dioviburnia (Dios Chemical Co.) contains "3-4 dr. each of the fl. extracts, viburnum prunifolium, viburnum opulus, dioscorea villosa, aletris farinosa, helonias dioica, mitchellæ (sic) repens, caulophyllum thalictroides, scutellaria laterifolia." The label also declares that dioviburnia contains 18 per cent. of alcohol. As the named fluid extracts in the quantities given require a much larger content of alcohol in dioviburnia, either the alcohol statement or the formula is incorrect. This complex preparation of drugs generally considered worthless is recommended by extravagant and unwarranted claims for a large number of widely differing female disorders. In a way the Dios Co. seems to recognize the inefficiency of dioviburnia, for it frequently suggests that it be used in combination with drugs of known value.

Palpebrine (Dios Chemical Co.) is claimed to be a solution of stated amount of morphin sulphate, zinc sulphate, mercuric chlorid, boric acid and salicylic acid. It is termed "A Reliable External Ocular Antiseptic." It is asserted that "with the assistance of palpebrine the general practitioner can successfully treat all cases of external eye disease ordinarily encountered in his practice." Even more dangerous is the recommendation of palpebrine for the prevention of ophthalmia in the newborn (*Jour. A. M. A.*, Jan. 9, 1915, p. 165).

Hayden's Viburnum Compound. This preparation, according to the advertising matter, depends for its action on viburnum opulus, dioscorea villosa and aromatics. The label admits the presence of 50 per cent. alcohol. Its use is advised in the treatment of female disorders, cramps, etc. A report of the Council on Pharmacy and Chemistry states that, even if it contains the ingredients claimed (it has been reported that viburnum opulus has not been on the market for years), the therapeutic action of the preparation depends almost entirely on the alcohol which it contains. The Council fears that the use of this preparation may initiate the alcohol habit in girls and women and publishes its report as a protest against its use (*Jour. A. M. A.*, Jan. 23, 1915, p. 359).

G. G. Phenoleum Disinfectant. This is a disinfecting solution sold by the G. G. Phenoleum Co., New York. It was found ineligible for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry because unwarranted claims were made for it and because the disinfectant power was not stated on the label, as required by the Council (*Jour. A. M. A.*, Jan. 30, 1915, p. 456).

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YORK—Julius H. Comroe, M.D., York.

All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, AUGUST, 1915.

PHILADELPHIA NEXT MONTH.

All our members who can possibly do so should plan to attend the annual session of the Medical Society of the State of Pennsylvania, which opens in Philadelphia, September 20. Monday will be given up to clinics in the various colleges, hospitals and institutions of the city, full notice of which will be given later. There will be a meeting of the Committee on Society Comity and Policy in the forenoon, and meeting of the Board of Trustees in the afternoon. The House of Delegates will hold its first meeting in the evening, at which time reports will be presented and probably important business transacted.

The official call and the preliminary program appear elsewhere in this issue. Particulars regarding hotels will be found in our advertising pages. If you were away on your vacation and did not read the July JOURNAL, please turn to page 821 of that issue and read the editorial entitled "Entertainment at Philadelphia," and then engage your hotel accommodations and post the following, or a similar notice, in your office.

> I WILL BE IN PHILADELPHIA
> on
> SEPTEMBER 20-24
> IN ATTENDANCE AT
> THE 65TH ANNUAL SESSION
> of the
> MEDICAL SOCIETY OF THE STATE
> OF PENNSYLVANIA.
> This trip is undertaken largely in
> the interests of my patients.

Should such notice lead to any comments on the part of patients call their attention to the fact that school teachers are paid for attendance at teachers' institutes because it increases the efficiency of the teachers. Remind them that lawyers, bankers, insurance agents, and others have their annual conferences in order the better to do their work, and that it is just as necessary for physicians to get together to compare notes on the discoveries and experiences of the year. The annual gatherings are postgraduate schools and keep the physician from falling into ruts and dropping behind in the practice of medicine. Our clientele should be willing to pay us larger fees if we improve these opportunities for learning how we may prevent or lessen disease and the better serve our patients when they need our professional care. S.

COMMITTEE ON SOCIETY COMITY AND POLICY.

President Heckel has appointed Dr. Lewis H. Taylor, Wilkes-Barre, a member and chairman of the Committee on Society Comity and Policy for the term ending in 1919 to fill the vacancy caused by the death of Dr. George W. Guthrie, and Dr. Wm. B. Ewing, Pittsburgh, for the term ending in 1917 to fill the vacancy caused by the removal and resignation from the committee of Dr. Walter H. Brown, Richlandtown. S.

MEDICAL MEN IN POLITICS.

Physicians are naturally brought in contact socially or professionally with people of all kinds, and are thereby fully acquainted with their moral and physical needs. Physicians are citizens and taxpayers and, as such, are entitled to exercise their rights and privileges the same as other citizens. It is not to be urged that physicians should be expected to practice both medicine and politics for a livelihood; however, the assistance of those who possess true zeal and altruistic motives should be very acceptable not only in shaping public health measures, but in regulating racial and national differences, which none understand better than members of the medical profession. Yet, strange to state, physicians, as compared with members of other learned professions, fill only a very small percentage of public offices.

This state of affairs is due, doubtless, to the tradition which has inculcated the idea that medical practitioners should keep aloof from politics, but there is no longer any good reason for clinging to that obsolete notion. Physicians represent a high grade of useful men, because they are practical sociologists and humanitarians, having traits which should be possessed by every legislator.

The training, or education, afforded by our public schools varies with environment and racial predominance. American methods are not wholly approved or understood by the increasing foreign population in many sections of the country; consequently, the laws sometimes need to be readjusted to meet requirements as they arise. Physicians, being in close touch with every social and moral condition, are amply prepared to become wise legislators for the best interests of all classes of people. They are expected to render counsel and professional aid whenever it is for the general good. Why not in matters politic? By the same rule, politics can be kept in a healthy condition with medical or sanitary renovation. It would be a credit to any community to be served by the ethical standard of the medical profession, rather than by the ethics of machine politics now commonly in vogue. Therefore, let physicians be encouraged to take an advanced step in politics. J. C. B.

"THEIR CHAPTER FROM THE BIBLE."

A letter from the president of a county society reads:—

"We meet at our club rooms every Friday night. Just after the adoption of the minutes, I always read a chapter of the A. M. A. Code of Ethics. When I finish the little book, I intend to start again at the first chapter. The members enjoy it and have learned to expect the reading, which they call 'their chapter from the bible.' "

How many county society presidents will agree to read a "chapter from the bible" at each meeting this coming year?

The above is taken bodily from the *Wisconsin Medical Journal* for July. May it not be a good idea for the county societies in Pennsylvania to adopt this method, at least at some of our meetings? Who will be the first president to try it, using necessary tact and enthusiasm? S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the July JOURNAL was printed:—

ALLEGHENY COUNTY: *New Members*—George R. Baalith. William Arthur Cave, William S. Charles, Eli N. Foster, James Hodgkiss, James R. Johnston, Charles K. Owens, Eugene O. Pearson, William F. Pollock, John P. Saling, John DeV. Singley, Lorenzo

W. Swope, William H. Thompson, E. Robert Wiese, Roger Williams, Pittsburgh; Theodore Baker, Wilkinsburg; John Ballagi, Homestead; Clarence C. Croft, Ben Avon; Stanislaus A. Godlewski, Braddock; David M. Koontz, New Kensington (Westmoreland Co.); William S. Ramsey, Coraopolis; Charles K. Shanor, Sewickley; Frank F. Sumney, Dravosburg; William V. M. Taylor, McKeesport. *Removal*—Clarence S. Allison from Ambridge (Beaver Co.) to Wexford.

Berks County: *New Member*—Morris L. Cahn, Reading.

Cambria County: *Transfer*—John D. Caldwell to Westmoreland County Society.

Elk County: *New Member*—Edward Charles Straessley, Elbon.

Fayette County: *Death*—Thomas Henry White (Jefferson Med. Coll., '70) in Connellsville, July 13, from cerebral hemorrhage, aged 69.

Franklin County: *Transfer*—Samuel A. Silk to Mercer County Society.

Jefferson County: *New Member*—Arthur C. McKinley, Corsica.

Lawrence County: *New Member*—Charles W. Davis, New Castle.

Mercer County: *New Member*—Samuel A. Silk, Sharon (by transfer from Franklin County Society).

Montgomery County: *Removal*—S. Nelson Wiley from Philadelphia to 1322 Glen Iris Ave., Birmingham, Ala.

Northampton County: *Removal*—Jacob Y. Salzman from South Bethlehem to Mansfield, Ohio.

Northumberland County: *New Member*—William W. Moody, Sunbury. *Death*—William J. Hanlon (Medico-Chirurgical Coll., '95) of Mt. Carmel, in Philadelphia, July 11, from cerebral hemorrhage, aged 52.

Philadelphia County: *New Members*—D. Miller Barr, Charles J. Cavanagh, William S. Crosby, Thomas A. Cope, James H. Cunningham, George F. Doyle, Edwin H. Erney, Collin Foulkrod, John P. Gallagher, William J. Harrison, Frederick C. Hutton, Augustus Koenig, Michael L. Levitt, William M. Morrow, Charles Scott Miller, George S. Mintzer, Gerald D. O'Farrell, Jr., John Raftery, James B. Rucker, Jr., Ross H. Thompson, Robert G. Torry, Joseph A. Turner, Frederick O. Waage, Holmes Walker, Charles C. Wolferth, John L. Yard, Philadelphia; W. A. N. Dorland, Chicago, Ill.; William F. Moore, Llanerch (Delaware Co.); John Peoples, Constantinople, Turkey. *Deaths*—Eugene I. Santee (Univ. of Pennsylvania, '66) in Philadelphia, June 16, aged 70; Winfield Beck Shepherd (Univ. of Michigan, Ann Arbor, '10) in Philadelphia, July 13, aged 30. *Removal*—Adolph I. Ringer from Philadelphia to 12 Mt. Morris Park, W., New York City.

Potter County: *New Member*—John H. Page, Austin. *Death*—Edelbert U. Eaton (Univ. of Buffalo, Med. Dept., 84) in Ulysses, July 15.

Somerset County: *New Members*—Jacob H. Bowman, Somerset; Henry Hertzler, Jenners.

Washington County: *No Longer a Member* Harrison L. Brehmer (transferred to the Ross County Medical Society of Ohio).

Westmoreland County: *New Member* John D. Caldwell, Irwin (by transfer from Cambria County Society); J. C. Stahlman, Vandergrift.

York County: *Death* Enos S. Mann (Univ. of Pennsylvania, '95) who was injured by the breaking of a tent pole in a cyclone which demolished a Chautauqua tent, at Dallastown, July 19, July 22, aged 49. S.

STATE NEWS ITEMS.

BORN.

To Dr. and Mrs. Aaron Brav, Philadelphia, twin daughters, recently.

MARRIED.

Dr. Kate McCool Taggart and Mr. Arthur Albert Schley, both of Beaver Falls, June 1.

Dr. Charles W. LeFever, Philadelphia, and Miss Susan Knight, at Dummerston, Vt., August 6.

DIED.

Dr. Daniel V. Seay (License, Tennessee, '89) in Philadelphia, June 20, aged 87.

Dr. Howard Wells (Jefferson Med. Coll., '70) in Philadelphia, July 16, aged 66.

Dr. Horace F. Livingood (Jefferson Med. Coll., '82) in Philadelphia, June 25, aged 56.

Dr. Mathew McVickers (Queens Univ., Dublin, Ireland, '80) in Pottsville, July 20, aged 56.

Dr. Bascom Benson Smith (Bellevue Hosp. Med. Coll., '69) in Pittsburgh, July 21, aged 75.

Dr. Lewis H. Adler (Jefferson Med. Coll., Philadelphia, '71) in Philadelphia, July 15, from uremia, aged 74.

Dr. William Allison Slaugenhaupt (Coll. of Physicians and Surgeons, Baltimore, '85) in Kane, July 21, aged 57.

Dr. Oswald W. Hacker (Med. Coll. of Virginia, Richmond, '09) in Wyomissing, July 15, from acute meningitis, aged 40.

Dr. Orin Frisbie Harvey (Univ. of Pennsylvania, '73) of Wilkes-Barre, at Harvey's Lake, July 25, from a complication of diseases, aged 69.

Dr. John Dowling Groves (Jefferson Med. Coll., '84) of Philadelphia, at his summer home in Westville, N. J., July 13, from laryngeal tuberculosis.

ITEMS.

Dr. E. E. Montgomery has fully recovered from a recent operation for hernia.

Pass Dental Board. Of the 172 students who took the recent examinations before the state Dental Board 143 passed, 29 failing.

Dr. John J. Gilbride, Philadelphia, read a paper on "The Acute Abdomen" before the Cumberland County Medical Society, at Vineland, N. J., July 6.

The German Hospital, Philadelphia, receives some $4300 by will of the late Elizabeth M. D. Prince, for a memorial to her father, Henry W. Enternach.

To Inspect Fair Grounds. Dr. Dixon is undertaking a thorough sanitary inspection of all county fair grounds, public picnic resorts, and general amusement places, with special attention to the water supply.

Dr. Francis P. Ball, Lock Haven, read a paper on "Intestinal Obstruction" before the Cumberland County Medical Society, at Boiling Springs Park, July 13.

The Elk County Medical Society, at its July meeting, instructed its member of the House of Delegates "to vote for some such plan as set forth by Northampton County, and for the Murray Resolution."

The Medical Society of Franklin County, at its meeting in Chambersburg, July 20, at 9:30 A.M., elected delegates to the state society and nominated a district censor, after which it adjourned to meet with the Fifth Censorial District at 10 o'clock.

Dr. George S. Hensyl, Mahanoy City, was badly cut and bruised, July 29, when his runabout was sideswiped by a heavy touring car on Vulcan Hill. Dr. Harry J. Krebs, who was with Dr. Hensyl, was hurled through the windshield, sustaining serious injuries.

The State Village for Feeble-Minded Women at Union City, Erie County, received no appropriation from the legislature this year, but the State Board of Public Grounds and Buildings has authorized the completion of the cottages, for which contracts were already let.

Dr. William D. Martin of Washington County, who is the father of the "Good Roads Day" idea in Pennsylvania, has been invited by Governor Brumbaugh to be one of the delegates representing the citizens of the state at the Pan American Congress to be held in California in September.

Union County Medical Society held its annual meeting and picnic at Bucknell University, July 15, and reëlected all its officers. After the dinner the society was addressed on the subject of "Cancer" by Drs. Silas D. Molyneux and George W. Hawk of the Robert Packer Hospital at Sayre.

Pass State Bureau. Of the 229 who took the June examinations 205 have received their licenses, only 24 failing to pass. The full twenty who took the examination for license to practice massage and allied branches were successful. Only one of the four who were examined for license to practice drugless therapy passed.

Baby Clinic. The baby clinic of the Emergency Aid, at 1121 South Thirteenth Street, Philadelphia, in the Italian quarter cares for an average of 100 babies at each clinic. These clinics are held Tuesday and Thursday morning from 11:30 to 1:30 and are under the guidance of Dr. Harriet MacSorley. Pasteurized milk is served by the nurses.

Druggists Pass Examination. Of the 235 who took the examination for registered pharmacists 190 passed and 45 failed before the State Pharmaceutical Board at Philadelphia and Pittsburgh, recently. Of the 174 applicants for certificates as qualified assistants, 114 passed and 60 failed. The next examination will be held in Williamsport, September 3 and 4.

Study of Occupational Diseases. A branch of the U. S. Public Health Service, under the supervision of Dr. J. W. Schereschewsky, of Washington, D. C., has been established in Pittsburgh. According to present plans four laboratories, chemical, physiological, bacteriological and physical, will be constructed. Investigations of the branch will extend to Cleveland, Buffalo and adjacent manufacturing centers.

The Pennsylvania State Dental Society held its forty-seventh annual convention in Reading, June 22-24. The next convention will be held in Pittsburgh. The following officers were elected: President, H. E. Friessell, Pittsburgh; vice presidents, S. P. Cameron, Philadelphia, and C. S. Van Horn, Bloomsburg; recording secretary, L. M. Weaver, Philadelphia; corresponding secretary, George S. Schlegel, Reading; treasurer, W. A. Spencer, Carbondale.

The Lehigh Valley Medical Society, at its midsummer session at Delaware Water Gap, elected the following officers: President, Dr. David H. Keller of Bangor; vice presidents, Drs. M. B. Ahlborn of Wilkes-Barre, A. P. Fetherolf of Allentown, John B. Corser of Scranton, Kate DeWitt Miesse of Easton; secretary, Dr. John W. Luther of Palmerton; assistant secretary, Dr. J. Harrington Young of Lansford; treasurer, Dr. Albert A. Seem of Bangor.

Alleged Swindlers of Physicians. Physicians from all sections of Philadelphia were in attendance at the Germantown Police Station July 24, to attend the hearing of Robert Colliday and Robert Wilkinson, charged with obtaining money under false pretenses by the sale of books to physicians. Eleven physicians appeared against the accused men and testified that books ordered and paid for had never been delivered. The accused were each held under $300 bail for further hearing.

Child Federation Places Bulletin No. 2 in Alleys. The second "health bulletin" which the Child Federation is placing in the courts and alleys of Philadelphia, for the instruction of those who do not read newspapers and have not access to the ordinary helps toward proper living, has been issued. The bulletin has been placed in the iron standards that have been erected for this purpose by the federation, and will be read by the children of thousands of foreigners and interpreted to their families. It deals with the evils of bad housing and is directed to fathers.

Keen Fellowship Established. Prof. William W. Keen has established the Corinna Borden Keen Research Fellowship in Jefferson Medical College, the income from which now amounts to $1000. The gift provides that the recipient of the fellowship shall spend at least one year in Europe, America or elsewhere (wherever he can obtain the best facilities for research in the line of work he shall select, after consultation with the faculty) and that he shall publish at least one paper embodying the results of his work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical College." Applications stating the line of investigation which the candidate desires to follow, should be forwarded to Dr. Ross V. Patterson, Sub-Dean, Jefferson Medical College, Philadelphia.

Dr. Ziegler, Philadelphia Director of Safety, calls attention to the fact that play grounds divert children from street play, corner lounging and from the patronage of low type theaters and pool rooms. As proof of this, the Director cited the experience in New York, where, he stated, it was asserted that more than one half of the 10,000 children who came before the courts each year for juvenile delinquency were brought there because of the lack of adequate places in which to play. Philadelphia, the Director said, was in similar position, but in this city the playgrounds, he argued, had resulted in reducing the number of arrests of youths under twenty-one years of age for crime by one half in districts which had them. Instead of fewer, there should be more playgrounds.

John Jenkins Buchanan, A.M., M.D., Ph.D., Professor of Surgery in The School of Medicine, University of Pittsburgh, for the past fourteen years, has resigned his active teaching and has been elected Professor Emeritus. Robert Talbott Miller, A.B., M.D., for the past five years a member of the staff of the Department of Surgery of the school, lately holding the position of Associate Professor of Surgery, has been promoted to the full professorship in charge of the Department. Dr. Miller is a graduate of Amherst College and Johns Hopkins University Medical School. He held a position of resident on the surgical staff of the Johns Hopkins Hospital for a peroid of six years, following which he was elected to the position of Instructor in Surgery in the Johns Hopkins Medical School, a position which he held for a period of two years, prior to his taking up his residence in Pittsburgh.

Changes at the Philadelphia General Hospital. Drs. George M. Boyd and Wilmer Krusen have resigned as obstetricians and Drs. Frank C. Hammond and John A. McGlinn have been appointed their successors. Dr. Henry W. Stelwagon has resigned as dermatologist and Dr. Henry K. Gaskill has been appointed his successor. Dr. Isaac H. Jones has been appointed laryngologist, Dr. James K. Young orthopedic surgeon, Dr. Alexander Uhle genitourinary surgeon, Dr. William J. McKiniey oral surgeon, Dr. Robert J. Hunter laryngologist to the tuberculosis department, Dr. Cornelius T. McCarthy assistant laryngologist to the tuberculosis department, Dr. George Wilson assistant physician. Dr. G. S. Crampton has resigned as assistant ophthalmologist and Dr. B. F. Baer, Jr., has been appointed his successor. Dr. Theodore LeBoutillier has resigned as assistant pediatrist and Dr. Charles V. Dorwarth has been appointed his successor. Dr. Harry C. Fish has resigned as assistant physician to the tuberculosis department and Dr. Thomas Kline has been appointed his successor. Dr. John F. X. Jones has resigned as assistant surgeon and Drs. Henry Winsor and Thomas Shallow have been appointed his successors. Drs. Thomas G. Aller and David Budin have resigned as assistant oral surgeons. Drs. George Wilson and Wilson G. Wood have resigned as registrars and they have been succeeded by Drs. Leon Solis-Cohen, J. Morton Boice, Clarence N. Smith, J. Ralston Wells, David W. Kramer, Russell S. Boles.

The Pennsylvania Pharmaceutical Association held its thirty-eighth annual convention at Forest Park, June 23 and 24. The next meeting will be held in Reading. Theodore Campbell of Overbrook, a member of the Pennsylvania Legislature, was elected to the presidency without opposition. The other officers are: Vice presidents, Adolph Schmidt, McKeesport, and Adam B. Heckerman, Port Royal; secretary, David J. Reese, Philadelphia; assistant secretary, Lewis H. Davis, Philadelphia; treasurer, F. H. E. Gliem, Lebanon; member of the executive committee for three years, Croll Keller, Harrisburg. The association agreed upon a state-wide educational campaign by which the public will be kept thoroughly informed on all matters in the drug business and on legislative issues, particularly in their connection with the public health and welfare. The Stevens price maintenance bill which failed to pass at the last session of Congress, was reindorsed by the association after a spirited discussion in which stirring addresses by J. Leyden White, the Washington representative of the National Association of Retail Druggists, and Samuel E. Henry of Philadelphia, its president, featured. The Pennsylvania association in this connection called upon the national organization to withdraw from the Chamber of Commerce of the United States on the ground that the problem of price standardization will be neither intelligently nor fairly handled by this chamber owing to the activity on its important committees of members of firms asserted to be openly engaged in unfair competition.

GENERAL NEWS ITEMS.

Medical Examiners will replace coroners in New York State after 1916 under the new law there. Every other state should do likewise.

Dr. Robert Hugh McKay Dawbarn (College of Physicians and Surgeons, New York, '81) died at his home in New York, July 18, aged 55.

Dr. Francis Delafield (College of Physicians and Surgeons, New York, '63) died at the home of his sister in Darien, Conn., July 17, aged 73.

Council on Pharmacy and Chemistry. During July the following article has been accepted for inclusion in New and Nonofficial Remedies: Beta-naphthol benzoate, Merck and Company.

American Nurses in Malta. Ten American Red Cross nurses, relieved from duty in Servia, were landed from Sir Thomas Lipton's yacht Erin at Malta to assist in caring for wounded of the Allied Armies brought there from the Dardanelles.

Exports of Medicines. The European war has nearly doubled American exports of medicines and surgical instruments. During the year ended June 30, exports of this class of goods amounted to $35,774,000, compared with $19,916,000 the preceding year.

The American Academy of Ophthalmology and Oto-Laryngology will hold its twentieth annual meeting in Chicago, October 5-7, under the presidency of Dr. Joseph C. Beck. On the day before the meeting and the two days following, clinics will be held at the various Chicago hospitals where members are expected and will be welcome. The headquarters will be at the Hotel Sherman.

Surg. Richard H. Creel, U.S.P.H.S., whom Boston has been trying for a long time to secure as commissioner of health, has now, it is reported, agreed to go to Boston for one year and reorganize the Department of Health under the terms of the new ordinance and with special reference to the taking over by the government of the Municipal Quarantine Station. It is said that Dr. Creel's salary will be $7500 a year.

Warning Against Typhoid. The United States Public Health Service has issued a warning to the 400,000 government employees in the United States that they should be vaccinated against typhoid fever during the summer months. The bulletin states that seventy-five government employees die each year from the disease. The Secretary of the Treasury has established 164 stations where antityphoid inoculation may be obtained without expense.

Typhoid Inoculation. A statement was recently made in the House of Commons by the British Under-Secretary of State for War that only 421 cases of typhoid fever had developed in the British forces during the present war and that of these, 305 had not been inoculated within two years. Among those who had been inoculated within two years, there was only one death and this individual had received only one inoculation instead of the two provided for by the regulations.

Dr. James Boyd Neal, a medical missionary and dean of the Union Medical School, Tsinan, China, is spending the summer in America. Dr. Neal is a graduate of Yale and of the Medical Department of the University of Pennsylvania, and went to China in 1888. He has translated several books into Chinese, and is recognized as a medical authority in China. Dr. Neal will read a paper at the General Meeting in Philadelphia next September, on "Medical Education in China."

Reward Antityphoid Vaccination. The Osiris prize of $20,000, which the Institute of France gives every three years for the most remarkable work in science, art, letters or industry, was awarded on June 2 jointly to Professors Widal and Chantemesse and Doctor Vincent, of the University of Paris, for their work in the development of antityphoid vaccination. As this prize can only be given to Frenchmen, the institute has awarded a special prize to Sir Almroth Wright for his discovery of this means of protection from typhoid.

War Helps Medical Women. A statement signed by the premier, Lord Curzon, and Hon. Arthur J. Balfour calls the attention of the public to the work in London of the School of Medicine for Women, which has now doubled its plant in an endeavor to cope with the war-time increase of opportunities for women physicians. The statement begins as follows: "The war constitutes the turning point in the position of medical women, for whom there are new openings and new opportunities in many directions."

The American Academy of Medicine, at the annual meeting in San Francisco in June, elected the following officers: President, Dr. George A. Hare of Fresno, Cal.; vice presidents, Dr. Reuben Peterson of Ann Arbor and Dr. R. W. Corwin of Pueblo; secretary, Dr. Helen C. Putnam of Providence, R. I.; treasurer, Dr. Charles McIntire of Easton; assistant secretary, Dr. W. L. Estes, Jr., of South Bethlehem. The next annual meeting will be held in Detroit. An adjourned meeting will be held at the Bellevue-Stratford Hotel, Philadelphia, Tuesday, September 21, at the close of the morning meeting of the Medical Society of the State of Pennsylvania.

American Ophthalmological Society, at the annual meeting held in New London, Conn., July 6 and 7, the following officers were elected: President, Dr. George E. de Schweinitz, Philadelphia; vice president, Dr. Peter A. Callan, New York City; secretary-treasurer, Dr. William M. Sweet, Philadelphia; councilors, Drs. William H. Wilmer, Washington, D. C.; Richard A. Reeve, Toronto, Ont.; Alexander Quackenboss, Boston; Arnold Knapp, New York City, and William Zentmayer, Philadelphia, and the committee on theses, Drs. William H. Wilder, Chicago; Alexander Duane, New York City, and George S. Derby, Boston. Washington was decided on as the place of meeting for next year and the dates selected were May 9 and 10.

Regulating the Sale of Proprietary and Patent Medicines. The Louisiana State Board of Health has adopted *verbatim* the ordinance enacted by the Board of Health of the City of New York in December last, regulating the sale of proprietary and patent medicines. This ordinance, which will become effective in New York City on December 31, 1915, requires either the registration of the names of ingredients of all proprietary or patent medicines with the Board of Health, or, in lieu thereof, the printing of the name of each ingredient "conspicuously, clearly, and legibly in English, on the outside of each bottle, box, or package in which the medicine or medicinal compound is held, offered for sale, sold, or given away." The weekly *Bulletin* of the Health Department says it is advised that Cincinnati has under consideration the enactment of this same ordinance, and that similar legislation is being considered in Indiana, Minnesota, and other Western States.—*The Medical Record.*

Organization of Medical Brotherhood, for the furtherance of international morality has been organized with a long list of officers and committees. The executive committee is made up of the following residents of New York City: President, Dr. S. J. Meltzer, member, Rockefeller Institute; first vice president, Dr. Rufus Cole, director, Rockefeller Hospital; second vice president, Dr. S. Josephine Baker, director, Department of Child Hygiene; first secretary, Dr. William J. Gies, professor of biologic chemistry, Columbia University; second secretary, Dr. Harlow Brooks, professor of clinical medicine; treasurer, Dr. Robert T. Morris, professor of surgery, Post-Graduate Medical School. Physicians are requested to enroll as members. There is no membership fee. But voluntary contributions for the purpose of upholding the organization, distribution of literature, etc., will be gratefully accepted. Replies and contributions to be sent to the Medical Brotherhood, care of Dr. S. J. Meltzer, 13 West One Hundred and Twenty-first Street, New York.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession, up to and including the week ending August 7, 1915.

Contributions:—

Receipts previously reported	$7625.84
Muskegon Oceana Medical Society, Muskegon, Mich.,	25.00
Dr. Robert F. Taylor, Philadelphia,	5.00
Dr. Francis Reder, St. Louis, Mo.,	10.00
Dr. Charles D. Lockwood, Pasadena, Cal.,	5.00
Dr. J. W. Ellenberger, Harrisburg,	5.00
Dr. Charles N. Dowd, New York,	25.00
Dr. Charles N. Dowd, New York,	25.00
Dr. Emil Lofgren, Rockford, Ill.,	5.00
Columbia Medical Society, Columbia, S. C.,	20.00
Washington County (Ark.) Medical Society, Fayetteville, Ark.,	14.00
Dr. J. F. Pressley, San Francisco, Cal.,	5.00
Marwick, Mitchell, Peat & Co., Chartered Accountants: Three Audits of the Treasurer's accounts, March 20, May 30, and June 20, 1915.	
Dr. E. W. Smith, Meriden, Conn.,	$10.00
Total receipts,	$7,779.84
Previously reported disbursements,	7,310.04
Balance,	$469.80

F. F. Simpson, Treasurer,
7048 Jenkins Arcade Bldg., Pittsburgh.

BULLETIN EXCERPTS.

Mirror, Fayette.

The Vacation.

The season for vacation has arrived and at its approach we find ourselves asking—can I afford to leave my work and spend a few weeks in relaxation? Will the money spent and the money lost be worth the benefit derived? Will I be robbing my family of necessities for pleasures by so doing? These are questions considered, no doubt, by every one contemplating a vacation.

The Bible informs us that in order to gain heavenly blessing every man must work out his own salvation. The same may be applied to our earthly blessings.

The question of a few weeks diversion must and no doubt will be answered, uninfluenced by advice, by every individual. It is impossible for one man to know the intimate life of another to such a degree as to be able to say to him, "You certainly can take a vacation if you only thought so." In the great majority of cases that expression, so often heard, is true and that man or woman could, if they will be willing to sacrifice a few dollars and a little time. Occasionally obligations must be met, the neglect of which would be injurious to the credit of the individual and the honor of his family, but the obligations must be met in such a way that they will not work disaster to the health of the individual and leave widows and orphans suddenly to stem the tide of misfortune to their sea of trouble.

We as physicians live to advise the ignorant, to relieve the needy and to comfort the afflicted and we owe it to our families, our patients, our friends and ourselves to put aside these exacting duties for a short period each year in order that we may become more competent to live up to the best that is in us.

Every human being delights in being released of the monotony of daily routine. The human mind enjoys diversion. We live for pleasure, for after all that is what is worth while in life. It is the conceived idea in the human mind that all hope of future pleasure and happiness is gone that prompts self-destruction. No individual will attempt self-destruction who is happy and enjoys his earthly lot, consequently pleasure is the chief objective of the human mind, for we are taught early in life that "The chief end of man is to glorify God and enjoy Him forever." This simply embodies joy, pleasure and happiness as being the aim of man in this world and in the world to come.

Fortunately our ideas of pleasure do not all tend in the same direction; consequently there are many sources for us to choose from. Dissipation however can not be considered a source, for the sequella of dissipation is anything but pleasure and we certainly can not enjoy it forever, as in the end we know the result is destructive and not constructive. Pleasure may simply consist in a mental and physical change in a new or different environment. The diversion need not be absolute idleness for two weeks or a month each year but simply a change from routine, different work, different food, different climate, different associates—simply a general change of everything connected with the daily life; bringing into action body cells which have long been dormant and giving our over-worked cells a chance to regain their vigor and vitality. If we fail to relieve our nervous tension at frequent intervals there comes a time when nature refuses to work longer without proper compensation. She will not be imposed upon by the too energetic or diligent for their simple pecuniary gratification. She demands rest and rest she will have even at the cost of life for no human being can pursue his or her strenuous routine of daily work unceasingly day after day and year after year and maintain that physical and mental balance which is so conducive to success without a proper interval of relaxation from the nervous tension and a recuperation of the entire nervous and muscular systems.

Better sacrifice some of our daily luxuries to permit us to enjoy a few weeks of absolute freedom from responsibility. "Go forth under the open sky and list to Nature's teachings."—G. H. HESS.

COMMUNICATION.

A LETTER FROM TEXAS.

To the Editor: I am in receipt of your July issue, and note an article headed "Shall We Be Outdone by Texas?" starting off as follows: "In that little State of Texas." You will note you later contradict this statement in saying, "Some of the members had to travel over six hundred miles to attend the Fort Worth meeting."

I do not know to what extent your JOURNAL circulates in this state, but Ye Editor is placing himself in the same position the drummer brought upon himself. This drummer, needing some money, wrote to his Texas customers to remit the balance they owed his house to him in Oklahoma, or he would draw on them at sight. Later when making the state he found all of his prospects waiting for him, with all manner of lethal weapons, from shot-guns to six-guns, and he was compelled to cut Texas out of his itinerary. You will understand that the statement to draw on sight in this country is construed as a threat and not as a promise.

Our profession are great travelers, in the summer time especially; you will find members of the Texas State Medical Association at all the clinics of the country, they speak familiarly of Mayo's, Murphy's, Bloodgood's, etc. They know Pennsylvania, New York, Illinois, California, etc., better than some of your Pennsylvanians know Philadelphia. I am sorry to note further in the same article that one of your "prominent sober, hard-working country practitioners spent four days at one of your meetings, and did not hear a single paper." If that gentleman had visited the Texas meetings he would have had his good time, lost his reputation for sobriety, heard all of the papers, and discussed some. I know this to be a fact as I have heard some of the discussions.

Never again forget, Mr. Editor, that Texas is the greatest state in the Union that your people so gloriously started. Come down here sometime and let us prove it to you. It is not a long journey; after you leave Pennsylvania, in a few hours you cross several states and the rest of the time you travel in Texas; it only takes two days and three nights from Philadelphia to Houston. We no longer run to six-guns, long-horned cattle, long hair and slouch hats; we do not allow liquor drinking on trains, have abolished the common drinking cup; some of our men have even worn little dinky hats with a feather in the hind end, so you see we really are civilized.

You will of course understand that this letter is written more in sorrow than in anger, and believe me

Yours very truly,
E. F. COOKE.

Houston, Texas, August 5, 1915.

BOOKS RECEIVED.

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

OPERATIVE GYNECOLOGY. By Harry Sturgeon Crossen, M.D., F.A.C.S., Associate in Gynecology, Washington University Medical School; Associate Gynecologist to the Barnes Hospital; Gynecologist to St. Luke's Hospital, Missouri Baptist Sanitarium and St. Louis Mullanphy Hospital; Fellow of the American Gynecological Society and of the American Association of Obstetricians and Gynecologists; St. Louis, Mo. 670 pages, 770 original illustrations. St. Louis, Mo.: C. V. Mosby Company. Price $7.50.

THE CARE OF THE BABY. By J. P. Crozer Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Sixth Edition Thoroughly Revised. 12mo of 463 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, A.B., M.D., Professor of Physical Education, and Director of the Department, University of Pennsylvania. Octavo of 585 pages, with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $4.00 net; Half Morocco, $5.50 net.

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania, Lecturer on Medicine in the University of Pennsylvania. Tenth Edition, Revised. 12mo of 629 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Flexible Leather, $2.50 net.

BUREAU OF MEDICAL EDUCATION AND LICENSURE.

Bureau of Medical Education and Licensure.
Members by Appointment.
John M. Baldy, Pres., 2219 DeLancey St., Philadelphia.
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LIST OF QUESTIONS SUBMITTED BY THE BUREAU OF MEDICAL EDUCATION AND LICENSURE AT THE JUNE, 1915, EXAMINATIONS.

MEDICAL AND SURGICAL.

PHYSIOLOGY, PATHOLOGY AND BACTERIOLOGY.

1. Given a case of suspected anemia outline the laboratory tests for confirming the diagnosis.

2. Given a case where continuous fever is a prominent symptom outline the laboratory tests that would aid in clearing up the diagnosis.

3. In acute lobar pneumonia (croupous pneumonia) detail the local conditions, the determining cause of these conditions, and state briefly the effect on the normal functions of the lungs.

4. Describe the method pursued in the preparation of autogenous vaccines.

5. Describe the lesions, name the causes and outline the technic of a method of demonstrating ophthalmia neonatorum.

6. Describe the processes of the death of bone and the sequela of such conditions.

7. Name and describe two pathological lesions which may have as a symptom hematemesis. Outline the laboratory tests that would aid in differentiating the above lesions.

8. Differentiate by laboratory methods acute parenchymatous nephritis from chronic interstitial nephritis. Describe the lesion in each condition.

9. In chronic interstitial hepatitis detail the local condition and state briefly the effect on the normal functions of the liver and on digestion.

10. Outline the tests for diagnosing tuberculosis aside from physical examination.

SYMPTOMATOLOGY, DIAGNOSIS, TOXICOLOGY AND MEDICAL JURISPRUDENCE.

1. Enumerate the symptoms of diabetes insipidus and differentiate it from diabetes mellitus and chronic interstitial nephritis.

2. Enumerate the symptoms of pernicious anemia. By the blood picture differentiate it from malaria and from syphilis.

3. Enumerate the symptoms of gallstones and differentiate them from those of renal calculus.

4. Enumerate the symptoms and physical signs of aneurysm of the thoracic aorta. (a) The ascending portion of the arch, (b) the transverse arch, (c) the descending portion.

5. Enumerate the symptoms of glaucoma and differentiate it from hemorrhage of the retina.

6. What is acute rheumatic fever? State in detail the symptoms diagnostic of the same.

7. Enumerate the physical signs and symptoms of acute plastic pericarditis and differentiate it from aortic murmur.

8. Enumerate the symptoms of perinephritic abscess.

9. Enumerate the symptoms and name antidotes in poisoning from (a) morphin, (b) strychnin, (c) atropin.

10. In a suspected case of criminal abortion how would you determine that pregnancy had existed?

OBSTETRICS AND GYNECOLOGY AND PHYSIOLOGICAL CHEMISTRY.

1. Name four abdominal enlargements which might be mistaken for prengancy (after the seventh month) and in each case outline the differential points from advanced pregnancy.

2. Should a woman with a deformed pelvis (early in pregnancy) engage your services, by what various means might you aim to secure her a living child? In each instance (method) what may be the limits of measurements of the conjugate-vera (true conjugate)?

3. If a woman in labor should suddenly develop symptoms of collapse or shock, name three causes which might be responsible for the condition. How would you recognize the condition present and how would you manage the case in each instance? (Omit description of operations.)

4. How would you deduce the presence of early uterine cancer? (a) of the cervix? (b) of the fundus? State the method of treatment you would adopt in each case and reason therefor. (Omit description of operations.)

5. If a woman consults you as to her future confinement and places herself under your care up to the time she falls into labor, detail the steps you must take in order to secure her safety. (State in detail any tests that should be made.)

6. Give the differential diagnostic points between the following conditions: Pyosalpinx; extrauterine pregnancy; retrodisplacement of a non-gravid uterus; retained fecal contents of the rectum.

7. If a woman presents herself upon whom presumably a criminal abortion has been committed in the early months of pregnancy, how will you tell whether or not the uterus is empty? What two symptoms are of the most importance? Discuss the significance and remote possibilities of each. State the proper method of treatment in such a case.

8. Discuss the chemistry of respiration.

9. Name the principal enzymes of the gastrointestinal tract and indicate the function of each.

10. Discuss proteins from the following standpoints: (a) Occurrence, (b) importance, (c) composition.

ANATOMY AND SURGERY.

1. Give a general outline of the treatment of gunshot wounds of the abdomen.

2. In injuries to the abdomen, such as from pressure between car bumpers or heavy crane, describe the traumatism that should be borne in mind. Outline the treatment of any one condition selected.

3. In supra-condyloid fracture of the femur: (a) What is the usual deformity? (b) What is the anatomical explanation of that deformity? (c) Outline the treatment.

4. In fracture of the surgical neck of the humerus: (a) What is the usual position of the fragments? (b) What is the anatomical explanation of the same? (c) Outline the treatment.

5. Describe the etiology of hare-lip. Outline a method for its cure.

6. What are the varieties of gastric ulcer? Without details, outline symptoms and conditions that would indicate the need of surgical intervention.

7. In inguinal hernia, what are the varieties, basing classification upon, (a) mode of exit? (b) Degree of decent? (c) Contents? (d) Congenital or acquired? Give a general outline of a method for radical cure.

8. In fractures of the skull what are the varieties? What are the indications for surgical intervention?

9. What is the usual position of the foot in Pott's fracture? What causes it? How should this injury be treated?

10. Describe and discuss the courses and varieties of the various bands and veils known under the general term of "Lane's Kinks" and "Jackson's Membrane."

PRACTICE AND MATERIA MEDICA AND THERAPEUTICS; HYGIENE AND PREVENTIVE MEDICINE.

1. Outline the treatment of a case of tertian malarial fever in a child of ten years of age and in an adult. Give the reasons (indications) for the remedies used.

2. What means and measures would you adopt in efforts to destroy mosquitoes known as agents in malarial infection?

3. What dietetic instruction would you give preparatory to the treatment of a case of tapeworm? Name three remedies that might be used in such a case and their effect. Give dose of each.

4. Outline the hygienic, dietetic and medicinal treatment of a case of rickets.

5. Outline the therapeutic indications in the treatment of a case of acute gout. State the reasons for the employment of each drug.

6. Outline the local and internal treatment of erysipelas giving the reason for the employment of each agent used.

7. What measures and means would you adopt in the prevention of typhoid fever and explain the reasons for each?

8. Outline the treatment of a case of laryngeal diphtheria in a child of ten years of age and give indications for all remedies.

9. How would you manage a case of hay fever and give reasons for each remedy used.

10. Outline the treatment of epilepsy and give reasons for treatments recommended.

CHIROPODY.

PHYSIOLOGY AND ANATOMY.

1. Describe a bursa. Where are they located in the foot?

2. Where is the plantar arch situated? What are its external landmarks?

3. What ligaments support the longitudinal or long arch of the foot?

4. How many phalanges are on each foot? Describe the terminal phalanges of any toe.

5. Describe the metatarsophalangeal joint of the great toe.

6. How would you recognize flat-foot? What is it caused by?

7. Describe the skin and its functions.

8. Define (a) tendon, (b) ligament, (c) bursa, (d) synovial membrane; cite an example of each.

9. What is the os calcis? Describe its relation to other bones.

10. How does the epidermis receive its nourishment?

PRACTICE.

1. What is "proud flesh"? What is its usual cause? How would you treat it?

2. How would you manage a case of ingrown toe nail?

3. If an infection of the foot were causing general systemic infection, what symptoms would you expect to occur?

4. How would you recognize "frost bite"? How would you treat it?

5. What varieties of corns occur? Describe your management of the same.

6. Enumerate the conditions of the foot that may arise from badly fitted shoes.

7. What is bromidosis? How would you treat it?

8. What condition of the foot would lead you to suspect diabetes?

9. How would you prepare foot and instruments preparatory to any operative procedure?

10. What would be your deduction if you found a foot to be swollen and pit on pressure?

DRUGLESS THERAPY.

PHYSIOLOGY AND ANATOMY.

1. Describe the stomach. State what its functions are in the digestion of food.

2. Describe the eustachian tube and its function.

3. Describe the structure of the kidney and the formation of urine.

4. Name the ductless glands and give theories as to their functions.

5. Name the intestinal fluids and give functions of each.

6. What structures enter into the formation of a joint? Describe in detail any one large joint selected.

7. Describe the circle of Willis.

8. Name the columns of the spinal cord and indicate the more important function of each.

9. Name the parts of a neuron. What are reflex actions?

10. Describe, giving origin, insertion, action and nerve supply, the latissimus dorsi muscle.

PATHOLOGY.

1. State the changes that take place in the lungs in tuberculosis.

2. Describe the spinal lesion in infantile paralysis.

3. Describe Pott's disease.

4. Describe the changes that may occur in the appendix when it is infected.

5. What tests would you employ to discover the existence of cancer of the stomach? Distinguish it from functional disease of the stomach.

6. What is the cause of apoplexy? Describe the symptoms of same.

7. What changes occur in the intestines in typhoid fever? Name the anatomical part of the intestine principally affected.

8. State the causes and describe the local conditions in hemorrhoids.

9. State the causes and describe the conditions found in meningitis.

10. Describe the changes which take place in an acute inflammation of the knee joint.

SYMPTOMATOLOGY, DIAGNOSIS AND HYGIENE.

1. Give the symptoms differentiating acute appendicitis from acute indigestion.

2. Give the symptoms differentiating acute tonsillitis from diphtheria. State the hygienic treatment of diphtheria.

3. State the differential symptoms between tuberculosis of the joint and acute articular rheumatism (rheumatic fever) in children. State the hygienic and dietetic treatment of each.

4. State the differential points in diagnosis between typhoid fever and malarial fever. Discuss the hygienic treatment of typhoid fever.

5. State the differential diagnosis between hydrocele and scrotal hernia.

6. State the differential symptoms between pleurisy and intercostal neuralgia.

7. Give the differential diagnosis between acute nephritis and chronic nephritis. State the complications which may occur in each case.

8. State upon what grounds you would base the opinion that a growth was (a) malignant, (b) benign.

9. State the more usual and important causes of hemorrhage from the bowels; of blood in the urine.

10. Give the symptoms and diagnostic points of syphilis.

MASSAGE AND ALLIED BRANCHES.

1. Define massage.

2. State conditions and type of cases, in which it might not be prudent to employ massage.

3. Give a general outline of the diseases and conditions in which you consider massage could be most efficiently employed.

4. What do you understand by the "Swedish Movement," or "Ling" system?

5. Give a general outline of the circulation of the blood.

6. Describe the skin and its functions.

7. Describe in detail the methods that you would employ to relieve a patient from gas in the intestines.

8. What type of treatment would you employ to relieve a patient suffering from neurasthenia?

9. What methods would you employ to treat the results of a sprained ankle?

10. How would you treat chronic constipation?

The Bureau of Medical Education and Licensure, on July 12, took the following action:—

Resolved, That after October 1, 1915, in order to receive approval of the Bureau of Medical Education and Licensure, any school teaching Massage and Allied Branches shall maintain as a minimum standard a graded course of instruction not less than thirty-two weeks of not less than thirty-five hours of each week, of actual work in didactic, laboratory and clinical study in a single calendar year, said course to include Anatomy, Physiology, Hygiene and Practical Bedside work; the courses in Anatomy to include demonstrations and study from wet dissected specimens of the human body not less than three hours each week for the full period of the course, and the courses in Practice to include not less than four hours daily of actual study and manipulation of the living human body. Motion carried.

It was moved and seconded that hereafter the semiannual examinations be held in January and July of each year so that a certificate of a full year's service as a hospital intern can be submitted with the application for examination. Motion carried.

It was moved and carried that applicants will not be admitted to the examination until they have submitted a certificate of their full year's service as an intern in an approved hospital.

It was moved and seconded that no applicant for the written examination be considered if he is a graduate from a school not on the approved list of the bureau. Motion carried.

Resolved, That it is the sense of the bureau that no hospital in our approved list shall accept any intern who has left another hospital with the disapproval of the authorities of that hospital which he has been serving. Motion carried.

It was moved and seconded that inasmuch as it has come to the attention of this bureau that certain medical colleges are not enforcing their published rules and regulations governing the admission of students to the course in medicine, it is hereby reaffirmed that on the receipt of evidence proving the above allegations, such colleges will be at once dropped from the approved list. Motion carried.

SOCIETY.

PHILADELPHIA POLYCLINIC OPHTHALMIC SOCIETY.

At the meeting of March 11, 1915, a Symposium on Glaucoma was presented.

The Pathogenesis and Etiology of Glaucoma. Dr. Samuel D. Risley (by invitation) said that he knew of no chapter in ophthalmology which has a wider literature than this and in which so little general advance had been made until within a few years and so far, he believes, much of the delay in a definite judgment and opinion with reference to this disease was due to the name, that is to say the term "glaucoma." It should be studied from the standpoint of the symptom complex and what it stands for, increased tension of the eyeball. For a number of years he has been very much interested in the study of the uveal tract of the eye, and as long ago as the time of the late Dr. Shakespeare when the talks they had on the subject of the investigations to be made along the lines of the choroidal tract led to the latter inventing the microscope.

Dr. Risley said that to him increased tension of the eyeball still constitutes one of the most perplexing and discouraging chapters in ophthalmology, and that he would like to dismiss the term glaucoma and study the significance of increased tension of the eyeball. After quoting from his article, "An Inquiry Regarding Increased Tension of the Eyeball," which he read before the American Academy of Ophthalmology and Oto-Laryngology in 1913, Dr. Risley said that the great question was the etiological factor.

If we pass rapidly before our minds the considerable group of ocular conditions which either culminate in increased tension or threaten to do so, we will be impressed by certain significant facts. For example, if we consider the atypical forms of glaucoma, (*a*) the buphthalmic eye of infancy and young childhood; (*b*) the cases of serous iritis; (*c*) chronic recurrent iritis of the plastic type, in each we find increased tension, seriously impaired acuity of vision, and when possible to determine it a contracted field, and in the laboratory cupped optic nerve, frequently the signs of an optic neuritis, choriocyclitis, iritis, atrophied ciliary muscle, dilated ciliary vessels, a degenerated vitreous body and an opaque lens.

Another atypical group is constituted by perforated cornea from corneal ulcer, or by perforating and infected wounds, leading to a partial corneal staphyloma, empty anterior chamber, iridocyclitis, increased tension and loss of vision. In the laboratory cupped optic nerve, inflamed and swollen, turged or atrophic ciliary muscle, dilated ciliary vessels, degenerated vitreous and opalescent or opaque lens.

Approaching the usually regarded typical forms, that is to say, the so-called primary glaucoma, our minds at once revert to their usual grouping: (*a*) Glaucoma simplex or the so-called non-inflammatory type, regarding the nature of which there has been so much discussion. (*b*) The subacute inflammatory type, beginning with transient impairment of vision, recurring attacks, increasing in severity and with briefer intervals between the exacerabations, the inflammatory features and pain meanwhile growing more pronounced, the anterior chamber shallow, the cornea steamy, the iris atrophic; the impairment of vision, the contraction of the field and increased tension, at first transient but becoming permanent. The anterior perforating vessels (long anterior ciliary) becomes permanently engorged; and from the first the transient attacks are associated with impaired range of accommodation. If neglected total blindness ensues and the disease passes into a stage of absolute glaucoma. In the laboratory is found a deeply cupped disc, atrophic optic nerve, atrophic ciliary muscle with evidence of preceding inflammation, dilated ciliary vessels, degenerated vitreous body, opaque lens; invariably both eyes in near sequence are involved. (*c*) The acute inflammatory type more violent from the onset, the final result as set forth in the former group rapidly consummated and the same laboratory findings in more exaggerated form. (*d*) The so-called hemorrhagic glaucoma, constituting one of the most striking and hopeless forms of the disease with which the ophthalmic surgeon meets.

He has in this summary eight well-defined groups characterized by increased tension of the ball and its disastrous sequelæ and by certain pathological findings in the laboratory more or less common to them all. What relation if any do they sustain to each other? Is there some etiologic factor, more or less common to them all, to which the increased tension is secondary?

In discussing these inquiries there are certain general considerations that can not be evaded. If we take for example the buphthalmic child with its destructive uveal disease, beginning before birth or during infancy or early childhood, we find it is obviously dependent on or constitutes a part of some general, usually hereditary, disease. He has published a striking example of the latter under the caption of prenatal iritis in a syphilitic child, in which the buphthalmos occurred and the child passed into imbecility, the victim of syphilitic endarteritis.

In conclusion Dr. Risley said that treatment of glaucoma or increased tension of the eyeball must be addressed to the etiological factor, which if done early holds out hopes of recovery.

The Use of Miotics in the Treatment of Chronic Glaucoma. Dr. W. C. Posey cautioned that this form of treatment was applicable only to cases in which there were no inflammatory symptoms, as the presence of these later demand some form of immediate operation. Miotics to be effective must be employed persistently and continuously four times a day. Their effects pass off at the end of three hours, and if the maximum amount of contraction of the pupil is to be maintained, the reinstillation must be faithfully carried out. In beginning cases the dose of the myotic should be weak, to avoid creating spasm of the iris or ciliary muscle, the strength being increased from time to time as the drug loses its effect upon the pupil. Dr. Posey said he employed the nitrate of pilocarpin at 8 A.M., 1 and 6 P.M., but ordered the salicylate of eserin for the last instillation at night, on account of the more lasting effect of the latter drug. To obviate the irritation set up sometimes by the miotics, he spoke of the necessity of flushing out the conjunctival cul-de-sac, some ten or fifteen minutes before the mictics were employed, with boracic acid solution. All miotic solutions should be compiled fresh once a month and should be perfectly sterile. Care should be taken to keep the dropper sterile. Attention should be given to the general health, tobacco prohibited and strychnin and alteratives prescribed for their effect on the optic nerve. He quoted figures deduced by him which showed far greater success from the treatment of miotics than from operation. He thought the treatment applicable to all stages of chronic glaucoma. He advised operation, however, on all hospital cases, on account of the difficulty of keeping this class of patients under continuous observation.

In closing Dr. Posey said that while the persistent, continuous use of miotics is a nuisance; nevertheless they never did any harm, whereas even the most skillfully performed iridectomies frequently interfered with vision by the creation of opacities in the lenses in consequence of hemorrhage from the iris at the time of the iridectomy.

W. W. WATSON, Reporter.

COUNTY SOCIETY REPORTS.

BERKS—JULY.

For their annual outing the Berks County Society held their meeting at Washington Inn, Valley Forge, July 13, to which the Chester County Society was invited. About 150 members and friends participated in the dinner which was served on the veranda. After greetings and a word of welcome President Borneman asked President Aiken of the Chester County Society to preside.

Dr. U. Grant Gifford of Avondale addressed the societies on "Myocardial Insufficiency." This address will appear in full in the JOURNAL. Dr. Sharpless, in discussing, said that they are most skillful in rendering a prognosis who can estimate the efficiency of the muscular apparatus of the heart. Patients have often succumbed to conditions the physician did not consider fatal. Such instruments as the sphygmomanometer and others aid in forming a correct estimate of cardiac affections. Frequently people with enlarged hearts plus valvular murmurs are still quite active, due to their having a sound cardiac muscle. Heart failure is often given as the cause of sudden death, while apoplexy is a more frequent cause. The keynote to the prognosis is the condition of the muscle, which, if properly nourished, gives good results.

Dr. Addison Rothrock of Reading read a paper on "A Question of Conservation," in which he made a plea for conserving the forests for the purpose of and as a means to the conservation of the cases of arrested tuberculosis.

Dr. Wilmer Krusen of Philadelphia spoke on "The Trials and Triumphs of a Doctor's Wife," in which he paid tribute to the women of former times, mentioning Helen of Troy, Cleopatra, Mary Queen of Scots, and Zenobia as challenging our distant admiration, but placed the doctor's wife in the class including Florence Nightingale, Elizabeth Fry, Ida Lewis and Jane Addams. Among the trials encountered he mentioned the spoiling of a good meal by the doctor's late arrival, the disappointment in his not being able to accompany her to some social function, the dealing with inquisitive patients, her being the silent bearer of many burdens, and enduring aches and pains in silence and with equanimity, for by the time he returns home he is wearied of hearing tales of woe. Dr. Krusen said she is the most artistic prevaricator he has ever met, and is often most tactful, for "Talent knows what to do but tact knows how to do it." The doctor's wife is the most useful in the community, often doing his laboratory work and reading his medical literature and later imparting to him the knowledge gained therefrom. While the soldier, shepherd, and sailor stand above the common herd, yet the physician stands above all for he most exhibits the virtues of the race; the wife in walking out often hears the people bless him and at the close of the day can think of him as having relieved some one. A doctor's wife is "A perfect woman nobly planned, to warm, to comfort and command."

Clara Shetter-Keiser, Reporter.

INDIANA—July.

Dr. W. J. Salisbury presented a paper on "Acute Gastroenteritis in Children." He divided the diarrheas in children into acute indigestion, cholera infantum and acute ileocolitis. The discussion was confined to expressions of appreciation for such an able paper.

Dr. G. E. Simpson presented a case which gave a history of a present illness dating back about one year, when the patient, an Italian, aged thirty-one, first complained of precordial pain of a dull, aching character radiating to the left shoulder blade. Pain has been worse at night and more severe during the past two months. He has no shortness of breath when at work but always difficulty in breathing when lying down, this being relieved by extending the head. He has palpitation of the heart much of the time. There were no symptoms referable to the head, ears, eyes, nose, mouth or genitals. Eructations of gas occurred almost continuously. He denied lues and gonorrhea; says he dreams a great deal and has night sweats frequently; has not lost weight. Past and family histories are negative. He is a miner, has been in this country five years and drinks beer and uses tobacco to excess.

Positive findings in the physical examination reveal pupils reacting well to accommodation but sluggish to light. Left pupil is irregular. Tongue is coated white, is moist, protrudes in the median line and is slightly tremulous. Apex beat is diffuse, visible and palpable in the fifth and sixth intercostal spaces about three inches from the midsternal line. In the suprasternal notch there is a palpable pulsation, synchronous with the apex beat, pressure over which causes pain there and over precordia. Eructations of gas are always associated with this pain resulting from pressure. Heart sounds are clear throughout. The area of cardiac dullness is within normal limits. Percussion note is impaired markedly over posterior aspect of chest from apices down to angles of scapulæ; vocal and tactile fremitus increased over the same area. There are no adventitious sounds. Abdomen and genitalia are negative. Left posterior cervical glands are palpable. Reflexes are exaggerated, the left biceps most markedly. X-ray shows enlargement in right upper chest. Apex of heart moves to left about two inches with each beat. Blood pressure: S. P., left 110, right 120; D. P., left 75, right 70; P. P., left 35, right 50. Diagnosis, aneurysm or new growth.

F. W. St. Clair, Reporter.

POTTER—July.

The Potter County Society met July 14 at the Rouch Place, adjoining the town of Galeton, and devoted its meeting to the subject of cancer.

Dr. Donald Guthrie, chief surgeon of the Robert Packer Hospital, Sayre, read a paper on "The Early Treatment of Cancer—Prophylaxis." As a member of the Cancer Commission he explained that the campaign at first was limited to the medical and nursing professions, particular attention being paid to the study of cancer in the curricula of medical schools. Later, the campaign was directed to the public. Articles such as have appeared in the *Ladies' Home Journal*, *Collier's Weekly*, *New York Times*, etc., have been of the greatest value in educating the public. At least one national society, composed of professional and lay members, has been formed for the study and prevention of cancer.

Dr. Guthrie referred particularly to tumors of the breast. Statistics definitely show that there is a marked increase in deaths from cancer, most of which are after the age of thirty-five years and during the most productive period of life. Twenty-five per cent. of deaths from cancer are due to cancer of the breast; furthermore, eighty per cent. of all tumors of the breast in women over thirty-five years of age are malignant when found by the surgeon and the remaining twenty per cent. will eventually become malignant if allowed to remain. Absolute cure can be obtained by removing the foci of local irritation either before they become actively cancerous or as early in the cancer period as possible. The responsibility in such cases rests, first, on the patient, who should present herself as early as possible for surgical aid; secondly, it rests heavily upon the general practitioner who sees these cases before the surgeon.

Pain in cancer of the breast is an exception rather than a rule and occurs only in well-advanced cases. Any tumor should be removed surgically without regard to age, since cases of cancer of the breast have occurred as early as nineteen years of age. At present twenty-five per cent. of cancers of the breast come to the surgeon in an inoperable condition.

Dr. Guthrie voices the conclusions of the Cancer Commission by saying that the method of use and the availability of radium make it impossible to treat but a very few cases of the total number of cancer patients; that the results of radium are no better than any other method and that its applicability is limited to only a certain type of cases; that until it is proven to be of greater value than other methods, the only proper attitude toward cancer is early diagnosis and complete removal.

Prof. James E. King of the University of Buffalo, read a paper on "The Treatment of Cervical Cancer," referring particularly to the precancerous state, explaining that cancer will develop in other than lacerated or scarred cervices; that even a minute erosion of the epithelium is a focus of local irritation. He described in detail four types of treatment, *i. e.*, radium, *x*-ray, heat, palliative. He spoke of the three stages of cancer: Early, limited to the cervix with possibly nothing in gross appearance that would be diagnostic, but the patient rarely presents herself at this time; the intermediate state in which the cancer is well advanced in the cervix uteri only, and without fixation; late cases in which there is involvement of the bladder or rectum with fixation of the uterus. In some cases with radium treatment good results have been reported, but in other cases the cancer seems to have been stimulated by it. The best results have been in early cases in which surgery should be the more efficient treatment. X-ray is as good as radium except that direct contact is not made possible. In the use of heat by the Percy method the temperature is high enough to destroy the cancer cells but not to cause any charring. In the palliative treatment of late cases Dr. King spoke of the use of acetone locally, followed by curetment to remove all sloughs. After protecting the surrounding parts by use of vaselin, he pours the acetone through a speculum, leaving it in contact with the cancerous area for twenty or thirty minutes. This tends to harden the cancer and relieves the patient from irritative discharges. The operative procedure in cancer of the cervix which offers the greatest hope of cure is the Wertheim operation. The mortality of this operation is great, but the percentage of cures, in cases which were formerly considered hopeless, is about fifty per cent.

Prof. D. C. McKinney, of the University of Buffalo, read a paper on "The Symptomatology of Early Rectal Cancer." He spoke particularly of the absolute necessity of a thorough examination of any case in which, as he stated, "the patient realizes he or she has a rectum," and of the vagueness of the symptoms which are constipation, diarrhea, bleeding, bearing-down pains, etc. The schirrus arises from submucous tissue; the adenocarcinoma from the glands themselves. He spoke also of the squamous-cell cancer arising at the anal orifice. The prognosis in rectal cancer is better than that of cancer in other regions because of the scanty lymphatic supply, allowing less rapid metastasis, but the tumor may spread by direct proliferation. The symptoms vary with the location of the tumor; the higher the growth, the longer the period of ignorance on the part of the patient. Dr. McKinney then showed some interesting proctoscopes for the illumination and pneumatic dilatation of the lower bowel by which thorough examination can be made.

The meeting adjourned and dinner was partaken of by the members of the society.

WARREN—JULY.

The Warren County Society met at the Warren State Hospital on July 23. The Erie, Crawford, McKean, Forest and Venango County Societies were invited and eighty-nine of their members and twenty of the Warren physicians were present. The following program was presented by the Warren State Hospital physicians and Dr. Joseph McFarland of Philadelphia who was the guest of honor and principal speaker.

Prognosis in Psychoses Occurring during Pregnancy and the Puerperium, by Dr. A. D. Finlayson: The number of cases which have been admitted to Warren State Hospital with a diagnosis of "puerperal insanity" with a hopeful outcome predicted by the family physician suggested to the writer an analysis of these cases in regard to diagnosis and prognosis. Puerperal insanity is merely an epochal affair showing the reaction of an unstable nervous organization to an unusual strain. This strain may assume the form of a faulty renal secretion during pregnancy, or an infection at parturition from faulty technic with a resulting toxic condition, and from the etiology is designated an infection psychosis. There may be a prolonged labor or severe post-partum hemorrhage causing mental symptoms; to this type the term exhaustion psychosis is applied. In these two types a fairly good prognosis for the attack can be given. The number of cases admitted during the last three years in which childbirth was the assigned cause was forty-four. Of these twenty-three were cases of dementia præcox in which mental dilapidation is the rule and therefore a hopeless outlook is to be predicted. Nineteen were of the manic depressive group and therefore gave a little more favorable prognosis, although some of these have had from one to seven attacks. Only two of the forty-four had a true infection or exhaustion psychosis and only three had any symptoms which would warrant such a diagnosis. Conclusion, a very guarded prognosis should be given for psychosis occurring during this period.

Hydrotherapeutics in Psychiatry, by Dr. R. F. Dowell: In order to understand the action of water, externally applied, it is necessary to understand the physiologic functions of the skin. The efficacy of hydrotherapy depends on the circulatory and nervous reactions produced, these reactions depending on the physiologic response of the skin. A large number of cases admitted to this hospital show malnutrition, impaired cardiac and renal functions and are favorable cases for hydrotherapy. In applying these measures we expect effectively to change the distribution of blood to the various parts of the body, to affect muscular tone and energy, to increase secretion and excretion by action on the circulation, to increase or decrease peripheral nervous irritability, reflexly to affect metabolism and radically to affect bodily temperature. Routine procedures, consisting of hot air, turkish and electric light baths together with the various douches, when given by a skilled attendant are useful in depressions, toxic and exhaustion psychoses, senile dementia and in any condition demanding tonic and supportive treatment. Excitements are managed with the warm pack and continuous bath. Practically all excitements may be controlled in this manner without the use of hypnotics or mechanical restraint. The results obtained from hydrotherapy in this hospital were an average increase in weight of several pounds, improved metabolism, improved cardiac and renal functions, the management of excitements without restraint or hypnosis and lastly appreciative patients.

The Psychoses of Literary Men, by Dr. Adelaide Ellsworth: That many of the prominent writers were insane is very evident from their own writings. Lombroso showed conclusively that men of genius descend from families rich in degenerates and insane. Many writers were hallucinated. Luther saw the devil; Bunyan "heard voices"; Byron was haunted by a specter. The letters, journals, poems and other writings show the nature of the symptoms suffered by the writers, most of whom were affected with manic depressive insanity. In this mental trouble one can usually elicit a family history of some form of degeneracy. Byron, Lamb, Cowper, Sam Johnson, Poe and others came from degenerate stock. Moral weakness is often very prominent in authors. Byron left accurate accounts of the mental processes of a degenerate. The manic depressive probably took to literature because he was unable to adapt himself to his natural environment and its mixture of good and evil. In compensation he created for himself a world in which the imagination eliminated the evil and unpleasant. The manifestations of his abnormal mental processes found an outlet in poetry and fiction under the guise of literary inspiration.

Psychoanalysis, by Dr. Ira A. Darling: The speaker expressed regret that psychoanalysis has been given so much attention in the lay press, that numerous medical workers have reported cases and opinions without having obtained a clear conception of the subject and that there is no clear short explanation of the subject in literature. He quoted the old law, "In the physical world there can be no effect without a cause, so in the psychical world there can never be an idea without a cause." If the idea is abnormal, finding and removing the cause is the rational means of destroying it. The various Freudian methods of discovering the causes were then mentioned and a short explanation of Freud's meaning when using the term "sexual" given. After a brief discussion of the late tendency to call the repression of hunger, fear, anger, etc., the basic cause in some cases, the speaker emphasized the value of simple sympathetic talks between the patient and his family physician and quoted a case in which this procedure had proved of value.

Epileptic Psychoses, by Dr. E. L. Dravo: Epilepsy causes about four per cent. of the admissions to the various state hospitals and the mental states which result from this disease differ greatly in different cases but generally there is a tendency to a progressive course and a complete dementia is reached in many cases. Every seizure has a tendency to destroy or impair the integrity of the mental faculties to a certain extent. In some, attacks may occur for a number of years and yet cause little, if any, deterioration. However, a careful study of all epileptics during the inter-paroxysmal periods reveals special phenomena which distinguish them from the normal individual. Epileptiform seizures may be associated with nearly all forms of mental disturbances. It is met with in the courses of functional psychoses, paresis, dementia præcox, and chronic alcoholic conditions. This occurs concomitantly with imbecility which is caused by some pathologic condition and with those forms of dementia which are caused by cerebral trauma.

Perceptible mental impairment may begin at any time following the onset of epileptic convulsions, all depending on the frequency and nature of the attacks, hereditary influences and the environments. In cases in which the disease is preceded by vicious and unwholesome living, especially alcoholic excesses, it begins almost immediately to mar the refinement of the psychic life. Very little importance can be attached to syphilis being a causative factor in this malady, but cases appearing during middle life are often attributed to such an infection.

The most common form of mental impairment seen in epileptics is that of a dementing process.

Aside from and accompanying this disorder there are episodic mental manifestations. Also there are psychic attacks and periods of automatism and it is in this form that criminality is prominent. In the younger patients the dementia which results from epilepsy shows a striking resemblance to dementia præcox and when occurring at an advanced age the picture resembles that of a senile dementia. As to prognosis, the earlier in life the onset the more unfavorable is the outcome. No recoveries can ever be reasonably expected, but remissions are quite common.

Résumé of After-care Work, by Anna M. Finlayson: During the past eighteen months an attempt has been made to visit as many paroled and recently discharged patients as possible, and about 200 such calls have been made by the eugenics field worker. The hospital has two aims in pursuing this work: first, it offers an opportunity to follow up cases where there is doubt as to the diagnosis, and, second, the visits help to establish friendly relations between the hospital and the community. It is neither possible nor practical to visit all the patients who leave the hospital. An occasional visit to the home of a paroled alcoholic, *e. g.*, seems of little value. Many of the patients who go home are demented but some of these patients get along well and are able to be of some help to their relatives. Visits to the homes of patients taken out on parole when still markedly depressed plainly show the error of such a course. The system of visiting patients after they leave the hospital seems of value as a practical method of rounding up the observation of a patient, and making the hospital the most efficient in serving the community.

Diagnosis at Autopsy, by Dr. Paul G. Weston: After having called attention to the papers by Cabot and Ash on the errors of clinical diagnoses discovered at autopsy, the author described two rather unusual cases which had come to autopsy at the state hospital. The first was a case of left-sided hemiplegia in which the lesion had been diagnosed *ante mortem* as being in the right internal capsule. At autopsy it was found that the entire right motor cortex had undergone softening and was completely destroyed. The sensory cortex was normal.

In the second case there was disturbance of the senses of pain, temperature, position and pressure on both sides of the lower half of the body but no disturbance of the stereognostic sense. Senses of hearing, sight, taste, and smell were intact. Lesions of the cord could hardly explain all the symptoms. A diagnosis of bilateral lesions in the thalami were made *ante mortem*. At autopsy it was found that the leg and lower abdominal areas in the sensory cortex on both sides had undergone extensive atrophy but not complete destruction. No other areas of the cortex were involved.

"The Latest Word on Cancer," was presented by Dr. Joseph McFarland, Philadelphia. The literature on cancer has reached such proportions that it is impossible for one to read even a large per cent. of it. Cancer has been investigated from almost every angle. Nevertheless we know little more than our forefathers about the etiology.

When bacteria were shown to be the cause of various diseases, research was directed toward finding a possible bacterial cause of cancer. Several times bacteria were announced to be the cause but time soon showed they were not. Protozoa were considered possible causes and Plimmer's bodies, Russel's fuchsin bodies and other intracellular inclusions were looked on as possible causes. Yeasts, mites, worms and even engrafted foreign tissue were for a time held to be the cause. Later it was discovered that cancers in some of the lower animals were transplantable. This led to numerous and interesting experiments which yielded much interesting information but did not show the cause of cancer. Certain chemical substances, Sudan III. for example, causes a proliferation of epithelium somewhat like cancer but when the chemical is removed the condition gets well.

Heredity has been written about very much in relation to cancer, but we have neither sufficiently large nor accurate statistics in regard to cancer in the human family to be of any value. The latest work on heredity is that of Miss Maud Sly. By artificial selection she was able to breed a race of mice in which no cancers developed while on the other hand she bred races in which fifty-eight per cent. of the individuals developed cancers. It is possible that cancer in the human being will be found to be an inheritable condition inherent in the germ plasm but the question then arises again, What caused the first cancer?

There is no indisputable evidence to show that the precancerous stage so frequently mentioned by the surgeons has anything whatever to do with the cause of cancer. Gastric ulcer and gastric carcinoma are frequently found associated with each other but there is no proof that the ulcer caused the carcinoma or the carcinoma the ulcer.

After all the expenditure of time, money, and energy we are still in the dark as to what a cancer is and what causes it.

Ira A. Darling, Reporter.

NECROLOGY.

IN MEMORIAM.—ENOS S. MANN, M.D.

(The following memorial note was presented before the York County Medical Society, August 5, 1915.)

The announcement of the sudden, untimely and tragic death of Dr. E. S. Mann, of Dallastown, was a shock to all who knew him.

Dr. Mann was born in Manor Township, Lancaster County, forty-nine years ago. His parents were of Scotch-Irish descent. He received his early education in the rural schools of Manor Township, and later attended Millersville State Normal School. He then taught school in his native township. Following this he filled a clerkship in the Columbia National Bank for two years, and an equal length of time in the Lancaster County National Bank, of Lancaster. After spending these four years in these institutions, he matriculated in the medical department of the University of Pennsylvania, from which he was graduated in 1895. He started the practice of medicine in Columbia. At this place he remained only a few months. He then moved to Dallastown and made this his home, where he enjoyed a large and remunerative practice until his death.

In the profession of medicine, Dr. Mann was sincere and sympathetic. As a physician he filled a very enviable place in his community. He was a particularly safe physician, was thoroughly conscientious and competent, and worked constantly for the welfare and happiness of his patients. Dr. Mann was a very close student of medicine; he was very observant and accurate in his work. He was one of our most ethical members. He was at one time president of our society. He filled a number of appointments on committees, and always served faithfully and worked for the good of the society.

In the death of Dr. Mann the community has lost one of its most respected citizens. He was one of the most progressive and public-spirited men of Dallastown, always ready to aid in bringing about civic improvements. He took great interest in the boys and girls of the public schools and always encouraged them to a higher education.

Dr. Mann was a member of the Lutheran Church. He was a member of the Independent Order of Odd Fellows Lodge and of the Order of Independent Americans. He served two years on the United States Pension Examining Board and was treasurer of this board at the time of his death.

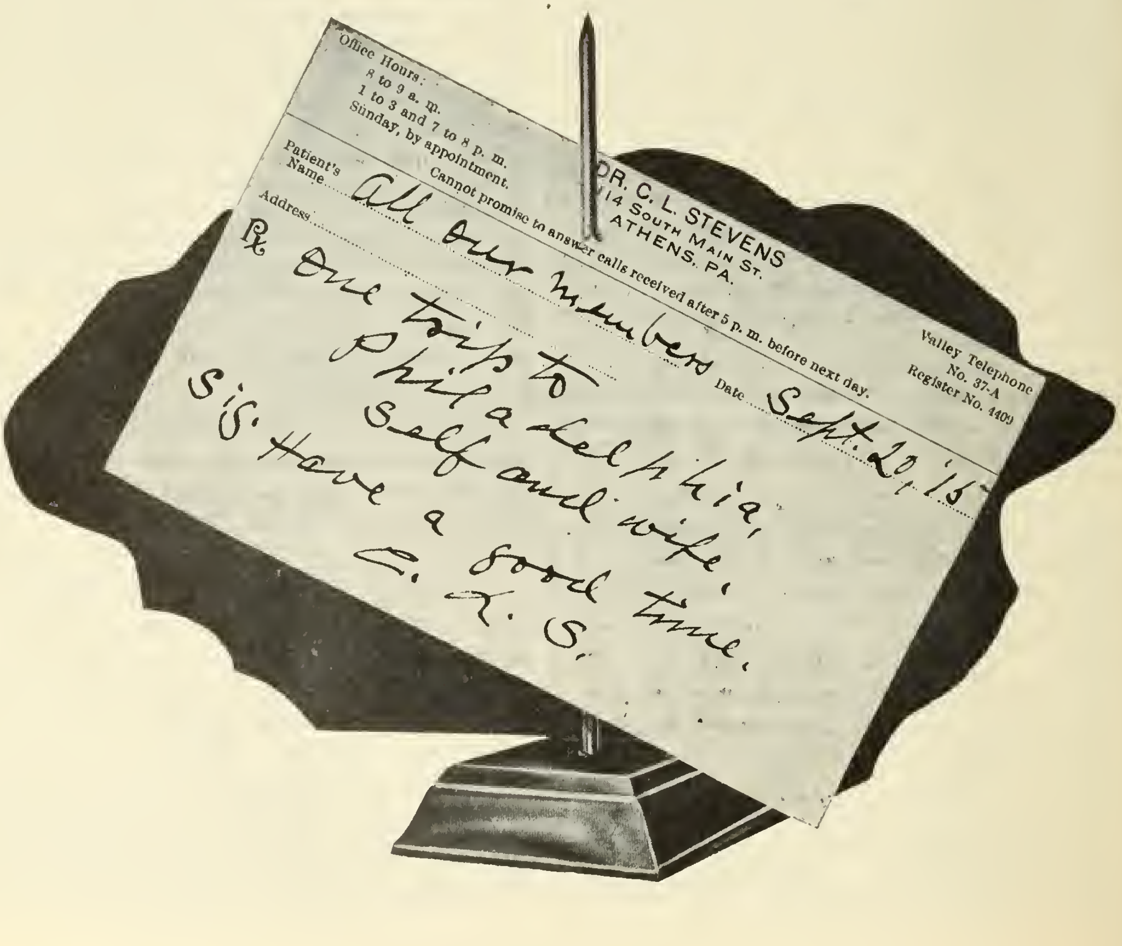
Dr. Mann met his death on July 19, 1915. On this date, while attending the Chautauqua at Dallastown, a storm arose and the tent was blown down. Dr. Mann was struck on the back by an electric light pole. This broken pole which struck Dr. Mann caused the fracture of several ribs and internal hemorrhage from which he died four hours after the accident. He was conscious until his death.

He is survived by his aged mother, Mrs. Anna W. Mann; his wife, who was Miss May Fulton; and three sons, Harold, Bernard, and Charles.

In the death of our esteemed brother this society has lost one of its most active and honored members.

The committee recommends that this memoriam be spread upon the minutes of this society, that it be published in the Journal and that a copy be sent to the bereaved family.

C. W. Eisenhower.
G. Emanuel Spotz.
Lawton M. Hartman.



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8 to 9 a. m.
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Patient's Name All our members Date Sept. 20, '15

Address

℞ One trip to
Philadelphia,
Self and wife.
S.S. Have a good time.
C. L. S.

Sixty-fifth Annual Session of the Medical Society of the State of Pennsylvania,

PHILADELPHIA, SEPTEMBER 20-24, 1915.

The Bellevue-Stratford, Headquarters.

OFFICIAL CALL.

To the Officers and Members of the Medical Society of the State of Pennsylvania:

The sixty-fifth annual session of the Medical Society of the State of Pennsylvania will be held in the Bellevue-Stratford Hotel in Philadelphia, from Monday, September 20, to Thursday, September 23, 1915. The House of Delegates will meet Monday evening, September 20, at 8 P.M.

The following substitutes for the respective sections of the present Constitution and By-Laws, as proposed by Dr. Murray of Punxsutawney at the Pittsburgh Session and laid over under the Constitution for one year, will come up for consideration by the House of Delegates.

Article V.—House of Delegates.

Section 1. The House of Delegates shall be the legislative body of the Society, and shall consist of: (1) Delegates elected by the component county societies, and *ex-officio* (2) the Trustees, the Secretary and the Treasurer without the right to vote; (3) the President of this Society and (4) the presidents of the component county medical societies; provided, however, that, if at the close of the roll call on the first meeting of any session the president of any component county society be not present then the secretary of that society shall be entitled to a seat in place of the president. If any component county society remains without representation at the close of the roll call of the second meeting of any session then the members registered from that county may select from their number the number of delegates which such county is regularly entitled to *elect:* if but one member is registered he shall be seated as the representative of that county. When any delegate is once seated no change can be made during the session. No individual member shall be entitled to more than one vote.

Section 2. The total voting membership of the House of Delegates shall not exceed 150. Each component county society shall be entitled to one delegate in addition to its president, and the remainder shall be apportioned among the component societies in proportion to their actual active membership as hereinafter provided in the By-Laws.

Chapter II.—House of Delegates.

Section 2. Each component county society shall be entitled to send to the House of Delegates each year its president or, as his alternate, its secretary and a delegate for every one hundred and fifty members, and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) The delegates and alternates should be elected at least six weeks before the annual session of this Society.

Chapter X.—County Societies.

Section 9. At some meeting at least two weeks in advance of the annual session of this Society, each component society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred and fifty members and for each fraction thereof. (Whenever the total possible voting membership of the House of Delegates reaches 150 according to the ratio of one delegate to 150 members, the House of Delegates shall establish a new ratio so as to reduce the total possible voting membership to 150 or less for succeeding sessions.) The secretary of the society shall send a list of such delegates to the Secretary of this Society immediately after their election.

Dr. Murray of Punxsutawney presented the following amendments which will come up for action:—

Add to Article XIII., and also to Chapter XII., the following:—

The vote on amendments shall be determined by a roll call of members of the House.

The following was printed on page 655 of the Journal for May, 1915:

PROPOSED AMENDMENT TO THE CONSTITUTION.

Philadelphia, February 20, 1915.

Dr. C. L. Stevens, Secretary,
Medical Society of the State of Pennsylvania,
Athens, Pa.

Dear Dr. Stevens,—

I desire to offer an amendment to the Constitution and By-Laws of the Medical Society of the State of Pennsylvania.

To amend Article IV., Section 1:—

Membership of this Society shall consist of the members of the component County Medical Societies who are in good standing in their respective societies.

Section 2: To omit the present section and insert the following:—

Any member of a constituent Society in affiliation with the Medical Society of the State of Pennsylvania may become a Fellow by applying for Fellowship and subscribing for the Pennsylvania Medical Journal, and paying the annual Fellowship dues for the current year.

Section 3:—

To amend Section 3 by crossing out the word "member" and inserting the word "Fellow" throughout the Section. Very truly yours,

William S. Wray.

Edward B. Heckel, President.
C. L. Stevens, Secretary.
Athens, Pa., August 10, 1915.

ANNOUNCEMENT.

The local Committee on Arrangements with the assistance of about twelve sub-committees has been busily working throughout the summer to complete a program for the scientific and social entertainment of the members and guests of the state society that will long be remembered by those who are fortunate enough to be in attendance.

No detail has been forgotten, even the entertainment of the children having been considered and special juvenile moving picture films arranged for their amusement at one of the leading theaters. This statement is injected at this time for the benefit of those "medicos" who always leave mother at home to care for the kiddies (no such excuse this time), we want the ladies and they can bring along the little ones.

As has already been hinted especial efforts have been expended with the object of providing entertainment for the ladies and it is hoped that those curious wives and daughters who read this will urge "the doctor" to take them along. A day has been set apart for that recreation, and ofttimes acrobatic performance, known as shopping and the stores will be over-flowing with bargains. In order to assure the ladies a free hand on this day, care has been taken to provide a most excellent scientific program for the doctors, so they can not meddle in the ladies' affairs.

The committee desires to intimate that there are a number of features being planned for the amusement of guests present that can not be definitely arranged until a few days prior to the meeting—then, too, one of the psychologists on the committee suggested that this indefinite announcement should have the effect of bringing us a few members out of pure curiosity who otherwise might not have decided to come.

It is urged that those members who propose attending the session write at once to Dr. William Duffield Robinson, 2012 Mt. Vernon St., Philadelphia, stating the number of ladies in the party; by so doing the committees will be better able to provide for every one.

As will be noted from a perusal of the schedule, a special effort has been made to care for the members' guests while the former are attending the scientific session so that the visiting doctors may attend every meeting with the happy assurance that their wives, children or sweethearts will not be compelled, as is often the case, to sit around the hotel waiting for their escort.

It must be remembered that the Bureau of Information will be located at the Bellevue-Stratford and that all trips and parties will be arranged by the committee at that hotel.

President's Reception: To those who have attended a former President's Reception in Philadelphia it will require few words to convey an idea of the one contemplated; but from information at hand this night promises to be one that will not be soon forgotten. No minor detail that could add to the success of the reception and ball has been overlooked and the whole medical profession of Philadelphia with their families will be there to see that their friends and colleagues from "up the state" have a royal good time. This will be the most important and undoubtedly the most enjoyable social function contemplated—a doubly happy occasion in so much as the ladies will be with us.

The smoker is arranged especially for the purpose of permitting the boys to get together, to discuss the days gone by and to predict the uncertain future. All who attend do so with one object in view (to eat, drink and be merry) and no one dresses up unless he wants to. We fail to find any previous smoker in the history of the Society that can parallel the one in store this year and for fear there may never be another, it would be well for all to be on hand. There is no charge to visiting members for the smoker, nor to local members who have contributed toward the entertainment of guests. And, finally, brethren, Dr. Robinson, in order to concoct more schemes for the entertainment of guests, has secluded himself somewhere in New Hampshire from which direction we receive from day to day some new suggestions or wise counsel.

The following schedule is subject to slight change:—

Tuesday, September 21st.

Specially conducted trips for ladies to

9 a.m. to 12 noon: Girard College; City Hall Tower; Curtis Building; Academy Fine Arts; Academy Natural Sciences.

2 p.m. to 11 p.m.: Stanley Theater, Arcadia Theater, Regent Theater, moving pictures afternoon and evening.

8 p.m.: Smoker, Scottish Rite Hall, Broad and Race Streets. Special entertainment to be preceded by exhibit of new set of Moving Pictures by Drs. Weisenburg, Smith and Landis on pathological, medical and neurological subjects.

Wednesday, September 22d.

9 a.m. to 12 noon: Shopping, Wanamaker Stores.

2 p.m.: Special Women's Meeting, Egyptian Hall (See page 912).

3 p.m.: Tour of the Store.

4 p.m.: Entertainment Egyptian Hall.

4:50 p.m.: Organ Recital.

8 p.m.: President's reception, Bellevue Stratford.

Thursday, September 23d.

9 a.m.: Boat Trip down the Delaware to Marcus Hook. Luncheon Served. (For Visiting Ladies Only).

8 p.m.: Lecture, Bellevue Stratford, Rose Room. The Public and the Profession—A Square Deal. Dr. Henry B. Favill, Chicago.

9 p.m.: Moving Pictures—Domestic Watering Places.

Friday, September 24th.

1 P.M.: Special Automobile Trip to Historic Valley Forge.

2:30 P.M.: Luncheon at Haverford. (For Visiting Ladies.)

Saturday, September 25th.

9 A.M.: Trip to Atlantic City. Hotel Accommodations free to each visiting member and lady at the following hotels: Chelsea, Marlboro-Blenheim, Dennis, Traymore, Chalfonte, Haddon Hall, Seaside, St. Charles, Pierrepont, Brighton.

11:30 A.M.: Special Moving Pictures for Children, Stanley Theater, Market Street between 16th and 17th Sts.

The Sub-Committee on Publicity.

WILMER KRUSEN, Chairman.
W. H. WALSH, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES, PHILADELPHIA SESSION.

(The offset names are the alternates, and where street address only is given the name of the city follows the name of the county.)

ADAMS COUNTY.

- Nicholas C. Trout, Fairfield.
  - James P. Dalbey, Gettysburg.

ALLEGHENY COUNTY (PITTSBURGH).

(Term expires in 1916.)

- William B. Ewing, Westinghouse Building.
  - Christopher C. Sandels, Westinghouse Bldg.
  - A. Ralston Matheny, 7032 Hamilton Ave.
- Edward B. Heckel, Jenkins Building.
  - Ernest W. Willetts, 5101 Liberty Ave.
  - John A. Hawkins, Jenkins Arcade Building.
- Irwin J. Moyer, 3525 Forbes St.
  - Richard E. Brenneman. Jenkins Arcade Building.
  - Russell H. Boggs, Empire Building.
- George C. Johnston, Jenkins Arcade Building.
  - Markley C. Cameron, 510 Highland Building.
  - David Silver, Bryant and Farragut Sts.
- Samuel Ayres, Westinghouse Building.
  - William S. Langfitt, Jenkins Arcade Building.
  - (vacancy)
- John DeV. Singley, 812 N. Highland Ave.
  - John M. Thorne, 3603 Fifth Ave.
  - J. Hartley Anderson, 807 Westinghouse Bldg.

(Term expires in 1915.)

- Edward Stieren, Westinghouse Building.
  - William S. Foster, 252 Shady Ave.
  - James W. Macfarlane, Westinghouse Building.
- James Witherspoon, 8126 Jenkins Arcade Building.
  - Henry T. Price, Westinghouse Building.
  - Nicholas G. L. Shillito, Jenkins Arcade Building.
- Acheson Stewart, 905 Keenan Building.
  - Curtis S. Foster, 308 Diamond Bank Building.
  - Clyde O. Anderson, 7043 Frankstown Ave.
- (vacancy.)
  - (vacancy.)
  - C. G. Eicher, 604 Chartiers Ave., McKees Rocks.
- Thomas M. T. McKennan, Jenkins Arcade Building.
  - George W. Ely, 7105 Frankstown Ave.
  - Robert L. Steele, 606 Locust St., McKeesport.

ARMSTRONG COUNTY.

- Samuel A. S. Jessop, Kittanning.
  - Jay B. F. Wyant, Kittanning.

BEAVER COUNTY.

- William C. Meanor, Beaver.
  - William F. Beitsch, New Brighton.
  - Robert M. Patterson, Beaver Falls.

BEDFORD COUNTY.

- Harry L. Shoenthal, New Paris.
  - Walter F. Enfield, Bedford.
  - William P. S, Henry, Everett.

BERKS COUNTY (READING).

- Israel Cleaver, 223 South Fifth St.
  - Ira G. Shoemaker, 19 S. Ninth St.
- Frank P. Lytle, Birdsboro.
  - John W. Kauffman, 814 N. Eleventh St.

BLAIR COUNTY.

- Samuel C. Smith, Hollidaysburg.
  - John B. Nason, Tyrone.
  - Joseph D. Findley, Altoona.

BRADFORD COUNTY.

- Philip H. Schwartz, Towanda.
  - Perley N. Barker, Troy.
  - Willis T. Davison, Canton.

BUCKS COUNTY.

- Alfred E. Fretz, Sellersville.
  - William J. Wilkinson, Sellersville.
  - Howard Pursell, Bristol.

BUTLER COUNTY.

- Leslie R. Hazlett, Box 643, Butler.
  - Mary P. Brooke, Butler.

CAMBRIA COUNTY.

- John B. Lowman, Johnstown.
  - Benton E. Longwell, Johnstown.
  - Harry M. Stewart, Johnstown.
- John B. McAneny Johnstown.
  - George W. Wagoner, Johnstown.
  - Frank U. Ferguson, Gallitzin.

CARBON COUNTY.

CENTER COUNTY.

- James L. Seibert, Bellefonte.
  - John V. Foster, State College.
  - George S. Frank, Millheim.

CHESTER COUNTY.

CLARION COUNTY.

CLEARFIELD COUNTY.

- Lever F. Stewart, Clearfield.
  - John M. Quigley, Clearfield.
  - George B. Kirk, Kylertown.

CLINTON COUNTY.

- Joseph M. Corson, Chatham Run.
  - James L. Lubrecht, Lock Haven.

COLUMBIA COUNTY.

- Benjamin F. Sharpless, Catawissa.
  - Samuel B. Arment, Bloomsburg.
  - J. Stacey John, Bloomsburg.

CRAWFORD COUNTY.

- Clyde L. Williams, Harmonsburg.
  - John K. Roberts, Meadville.
  - Cornelius C. Laffer, Meadville.

CUMBERLAND COUNTY.

- Harry A. Spangler, Carlisle.
  - Americus R. Allen, Carlisle.

DAUPHIN COUNTY (HARRISBURG).

- John F. Culp, 41 N. Third St.,
  - J. Edward Dickinson, 228 N. Second St.
  - William J. Middleton, 101 N. Second St., Steelton.
- Clarence R. Phillips, 1646 N. Third St.
  - Jesse L. Lenker, 402 N. Second St.
  - Earle R. Whipple, 241 Pine St., Steelton.

DELAWARE COUNTY.

- Norman D. Smith, Rutledge.
  - Walter E. Egbert, Chester.
  - H. Furness Taylor. Ridley Park.

ELK COUNTY.

- Henry H. Smith, Johnsonburg.

ERIE COUNTY (ERIE).

- Wallace R. Hunter, 804 Peach St.
  - David N. Dennis, 2221 W. Ninth St.
- David H. Strickland, 153 W. Seventh St.
  - Fred E. Ross, 154 W. Eighth St.

FAYETTE COUNTY.

FRANKLIN COUNTY.

John J. Coffman, Scotland.
Frank N. Emmert, Chambersburg.
Percy D. Hoover, Waynesburg.

GREENE COUNTY.

HUNTINGDON COUNTY.

John M. Keichline, Jr., Petersburg.
Howard C. Frontz, Huntingdon.
William Hardin Sears, Huntingdon.

INDIANA COUNTY.

William B. Ansley, Saltsburg.
Albert T. Rutledge, Blairsville.

JEFFERSON COUNTY.

John H. Murray, Punxsutawney.
Norman C. Mills, Big Run.
Spencer M. Free, Dubois.

JUNIATA COUNTY.

William H. Banks, Mifflintown.
Benjamin H. Ritter, McCoysville.
Isaac G. Headings, McAlisterville.

LACKAWANNA COUNTY (SCRANTON).

Harry W. Albertson, 2416 N. Main Ave.
John B. Corser, Scranton Private Hosp.
John D. Butzner, 506 Dime Bank Building.
James P. H. Ruddy, 206 Dime Bank Building.
John F. Zychowicz, 1315 Prospect Ave.
J. Norman White, 349 S. Main Ave.

LANCASTER COUNTY (LANCASTER).

Frank G. Hartman, 136 N. Duke St.
Charles P. Stahr, 139 E. Walnut St.
Samuel W. Miller, 217 E. King St.
Horace C. Kinzer, 134 N. Duke St.
J. Paul Roebuck, 233 N. Duke St.
Edgar J. Stein, 234 N. Duke St.

LAWRENCE COUNTY.

William A. Womer, New Castle.

LEBANON COUNTY.

LEHIGH COUNTY (ALLENTOWN).

Charles A. Haff, Siegfried.
Charles H. Schlesman, 216 N. Seventh St.
Frederick R. Bausch, 109 N. Second St.

LUZERNE COUNTY (WILKES-BARRE).

Harry L. Whitney, Plymouth.
Herbert B. Gibby, 96 South Franklin St.
Lewis Edwards, 790 Market St., Kingston.
Lewis H. Taylor, 83 S. Franklin St.
John B. Mahon, Pittston.
Samuel P. Mengel, 64 N. Franklin St.

LYCOMING COUNTY (WILLIAMSPORT).

MC KEAN COUNTY.

William P. Burdick, Kane.
James Johnston, Bradford.
Evan O. Kane, Kane.

MERCER COUNTY.

Clifford Marshall, Sharon.
John E. Ferringer, Stoneboro.

MIFFLIN COUNTY.

Alexander S. Harshberger, Lewistown.
Samuel W. Swigart, Lewistown.

MONROE COUNTY.

John H. Stearns, Delaware Water Gap.
Charles S. Logan, Stroudsburg.
John A. Hagerman, Sciota.

MONTGOMERY COUNTY.

Philip Y. Eisenberg, Norristown.
Winfred J. Wright, Skippack.
Willis R. Roberts, Norristown.
Harry H. Whitcomb, Norristown.
Henry C. Welker, Norristown.
George R. Irwin, Bridgeport.

MONTOUR COUNTY.

NORTHAMPTON COUNTY.

William P. O. Thomason, Easton.
Victor S. Messinger, Easton.
Sterling D. Shimer, Easton.
William P. Walker, South Bethlehem.
Carl F. Welden, Bethlehem.
Delbert K. Santee, South Bethlehem.

NORTHUMBERLAND COUNTY.

Horatio W. Gass, Sunbury.
Charles W. Rice, Northumberland.
Lester E. Schoch, Shamokin.

PERRY COUNTY.

Maurice I. Stein, Millerstown.
E. Kenneth Wolff, Ickesburg.

PHILADELPHIA COUNTY (PHILADELPHIA).

(Term expires in 1916.)

J. Montgomery Baldy, 2219 DeLancey St.
George P. Müller, 1729 Pine St.
Eleanor C. Jones, 1531 N. 15th St.
John D. McLean, 1538 S. Broad St.
George Erety Shoemaker, 1831 Chestnut St.
Charles F. Nassau, 1831 Chestnut St.
Christian B. Longenecker, 3416 Baring St.
Howard A. Sutton, 341 S. 15th St.
William M. L. Coplin, 606 S. 48th St.
Herman B. Allyn, 501 S. 42d St.
Henry J. Bartle, 1727 N. 17th St.
B. Franklin Stahl, 1727 Pine St.
George W. Outerbridge, 2040 Chestnut St.
G. Morton Illman, 3235 N. 15th St.
Clara Marshall, 258 S. 16th St.
Gordon M. Christine, 2043 N. 12th St.
Martha Tracy, 5138 Wayne Ave.
Henry Beates, Jr., 260 S. 16th St.
Wendell Reber, 1212 Spruce St.
Hugh P. McAniff, 2413 N. 7th St.
Albert C. Buckley, Friends Hosp., Fkd.
William H. Walsh, 207 S. 22d St.
Howard D. Geisler, 35 High St., Gtn.
R. Max Goepp, 124 S. 18th St.
Kate W. Baldwin, 1117 Spruce St.
Samuel P. Gerhard, 639 N. 16th St.
McCluney Radcliffe, 1906 Chestnut St.
Samuel Wolfe, 1701 Diamond St.
Marie K. Formad, 927 N. Broad St.
Benjamin F. Devitt, 1503 N. 15th St.

(Term expires in 1915.)

Wilmer Krusen, 127 N. 20th St.
Frank C. Hammond, 1729 Arch St.
Clarence P. Franklin, 121 South 16th St.
Alice M. Seabrook, 22d St. and N. College Ave.
Nellie C. Craig, 215 N. 52d St.
Ella B. Everitt, 1807 Spruce St.
William S. Higbee, 1703 S. Broad St.
John B. Turner, 1525 Christian St.
D. Randall MacCarroll, 2503 S. Broad St.
Arthur C. Morgan, 3118 Diamond St.
Francis J. Dever, 319 S. 18th St.
Theodore H. Weisenburg, 2030 Chestnut St.
George A. Knowles, 4812 Baltimore Ave.
Samuel M. Wilson, 1517 Arch St.
Hiram L. Lutz, 5527 Woodland Ave.
Thomas R. Currie, 512 W. Lehigh Ave.
William T. Hamilton, 932 W. Lehigh Ave.
John F. Roderer, 2426 N. 6th St.
Jay F. Schamberg, 1922 Spruce St.
Daniel Longaker, 1402 N. 16th St.
Ross H. Skillern, 2032 Chestnut St.
William M. Welch, 1411 Jefferson St.
Stephen E. Tracy, 1527 Spruce St.
James E. Talley, 218 S. 20th St.

POTTER COUNTY.

SCHUYLKILL COUNTY.

Arthur B. Fleming, Tamaqua.
William T. Williams, Mt. Carmel.
George R. S. Corson, Pottsville.

SNYDER COUNTY.

John O. Wagner, Beaver Springs.
R. W. Johnson, Selins Grove.
A. Jerome Herman, Middleburg.

SOMERSET COUNTY.

SULLIVAN COUNTY.

Philip G. Biddle, Dushore.
Silas D. Molyneux, Sayre.

SUSQUEHANNA COUNTY.

TIOGA COUNTY.

UNION COUNTY.

Charles A. Gundy, Lewisburg.
Ralph Steans, Lewisburg.

VENANGO COUNTY.

George B. Jobson, Jr., Franklin.
J. Irwin Zerbe, Franklin.

WARREN COUNTY.

WASHINGTON COUNTY.

Thomas D. M. Wilson, Washington.
William D. Martin, Dunns Station, R.D. 2.
William J. L. McCullough, Washington.
John B. McMurray, Washington.
Larry D. Sargent, Washington.
John N. Sprowls, Claysville.

WAYNE COUNTY.

Louis B. Neilsen, Honesdale.
Harry B. Ely, Honesdale.
Fred W. Powell, Honesdale.

WESTMORELAND COUNTY.

Thomas W. Moran, Latrobe.
Harold N. Prothero, Jeannette.
Myers W. Horner, Mt. Pleasant.
Florence L. Marsh, Mt. Pleasant.
James P. Strickler, Scottdale.
George T. McNish, Alverton.

WYOMING COUNTY.

YORK COUNTY (YORK).

J. Ferdinand Klinedinst, 220 S. George St.
Joseph C. Atkins, Red Lion.
J. Nelson Dunnick, Stewartstown.
George E. Holtzapple, George and Princess Sts.
Charles W. Eisenhower, 147 S. George St.
James C. May, Manchester.

DELEGATES FROM OTHER SOCIETIES.

THE CONNECTICUT STATE MEDICAL SOCIETY.

William E. Fisher, Middletown.
William H. Carmalt, New Haven.

PRELIMINARY PROGRAM.

GENERAL MEETING.

TUESDAY, SEPTEMBER 21, 10 A.M.

Called to order by the President.
EDWARD B. HECKEL, Pittsburgh.

Prayer by REV. MARCUS A. BROWNSON, Philadelphia.

Address of Welcome.
HON. RUDOLPH BLANKENBURG, Mayor of Philadelphia.

Address of Welcome.
E. E. MONTGOMERY, President of the Philadelphia County Medical Society.

Presentation of Program and Announcement of Entertainments.
J. TORRANCE RUGH, Chairman of the Committee on Arrangements.

Introduction of Delegates from other Societies.

Installation of the President Elect.

1. President's Address.
JOHN B. MCALISTER, Harrisburg.

2. Report of the Cancer Commission.
JONATHAN M. WAINWRIGHT, Scranton.

3. Evil Effects of Delayed Operation in Malignancy. (15 min., illustrated with lantern slides.)
CHRISTIAN B. LONGENECKER, Philadelphia.

OUTLINE. Cause: Physicians approach the diagnosis of early malignancy with much reserve; patients themselves suggesting possible malignancy frequently advised to wait for more definite symptoms, or placed on palliative treatment. Effect: After undue delay, operation more difficult and less sure; chances for recovery lessened; recurrences much more likely; hence, mortality increased from ten to ninety per cent. Remedy: Special instruction in malignancy; continuance of the campaign of education among physicians as well as the laity, so that both may get in closer touch.

Discussion on papers 2 and 3 opened by JOHN G. 'CLARK, Philadelphia, and FRANK F. SIMPSON, Pittsburgh.

4. Pennsylvania's Relation to Industrial Safety and Health.
JOHN PRICE JACKSON, Commissioner of Labor and Industry of Pennsylvania, Harrisburg.
Discussion opened by FREDERICK L. VANSICKLE, Olyphant.

(An adjourned meeting of the American Academy of Medicine for the election of officers and the transaction of any necessary business will be held immediately after adjournment of the General Meeting.)

TUESDAY, SEPTEMBER 21, 8 P.M.

SCOTTISH RITE HALL, BROAD AND RACE STREETS.

Moving Pictures.

Microscopic Phenomena.
ALLEN J. SMITH, Philadelphia.

Lung and Heart Conditions.
H. R. M. LANDIS, Philadelphia.

Nervous Disease Films.
CHARLES K. MILLS and T. H. WEISENBURG, Philadelphia.

WEDNESDAY, SEPTEMBER 22, 9:30 A.M.

5. Diagnosis of Tubal Pregnancy; a Critical Study of Seventy-five Consecutive Cases (12 min.).
ALFRED HEINEBERG, Philadelphia.

OUTLINE. Diagnosis of tubal pregnancy before any interruption in course of pregnancy occurs, and after its course has been disturbed in one of several ways. Brief review of changes which take place in the pelvic structures and the embryo before any disturbance takes place. Symptoms and physical signs leading to diagnosis before rupture or abortion. Causes of failure to make diagnosis in this stage. Classification of cases, in which interruption in pregnancy has occurred, into "tragic and nontragic." Pathological changes during and after interruption in each type. Symptomatology and diagnostic signs. Differential diagnosis from ordinary abortion, twisted pedicle of an ovarian cyst, pyosalpinx, appendicitis and other conditions causing peritonitis.

Discussion opened by WILLIAM R. NICHOLSON and JOHN A. MCGLINN, Philadelphia.

6. Scopolamin-Morphin Anesthesia in Obstetrics.
JAMES R. FREELAND, Pittsburgh.

OUTLINE. Review of seven years' experience with scopolamin as an anesthetic in labor and reference to a paper written in association with Dr. Solomons in 1910. Statistical review of cases in reference to the effect of scopolamin in relieving pain, its effect on uterine contractions and duration of labor, its effect on the child, and the temporary and permanent mental effect on the mother. Conclusions in reference to its practicability, efficiency and safety.

Discussion opened by BARTON COOKE HIRST, Philadelphia.

7. Pregnancy and Tuberculosis with the Report of a Series of Cases.
CHARLES C. NORRIS, Philadelphia.

OUTLINE. Influence of pregnancy in the course of pulmonary tuberculosis, during early months of pregnancy, during late months of pregnancy, during puerperium and during lactation. Condition of children born of tuberculous mothers. Treatment, prophylactic, hygienic and dietary. Discussion of advisability of emptying uterus. Analysis of a series of cases. End results. Conclusion.

Discussion opened by H. R. M. LANDIS, Philadelphia.

8. Some General Principles in Surgical Diagnosis.
J. CHALMERS DACOSTA, Philadelphia.

9. Hospital and Home Isolation. (20 min.)
DENNETT L. RICHARDSON, Providence, R. I.

OUTLINE. Exact cause of many infectious diseases unknown, but considerable definite knowledge of how virus escapes from body. How long viruses live outside the human body, whether they multiply, and under what conditions are they a source of actual infection. There are available data, the accumulation of twenty-five years of experience, which practically rules out atmospheric contagion as of any real importance. Facts from French, English and American hospitals on this point. Underlying principles of control of infectious diseases by home isolation the same as in the hospital. Utilize simple methods of protection of other members of family in place of elaborate hospital equipment. The human being himself the chief distributer of disease directly. Three sources of disease in the community are persons who are recognizedly sick with some infectious disease, missed cases, so mild a sickness that patients pursue their avocations; and the carriers. Field work.

10. Quarantine of the Home as Practiced by the Department of Health in Pennsylvania.
SAMUEL G. DIXON, Harrisburg.

OUTLINE. Reasons for the various types of quarantine established, details of community quarantine and domiciliary quarantine, differences between modified quarantine and absolute quarantine, conditions under which wage earners' permits may be granted with quarantine over the premises, etc., the changes in quarantine under the new law.

Discussion of papers 9 and 10 opened by S. LEWIS ZIEGLER, Philadelphia.

THURSDAY, SEPTEMBER 23, 2 P.M.

11. An Unappreciated Form of Pneumothorax.
CHARLES REA, York.

OUTLINE. So far as known, an unreported variety of the condition. Due to rupture of air vesicles from a tearing of the pleura; probably always due to a previous pleurisy resulting in an adherence of the two surfaces. Frequency. Condition most familiar to radiologists. Symptoms and signs. Differential diagnosis. General care all the treatment that is indicated. Prognosis favorable in majority of cases.

12. Therapeutic Pneumothorax in Pulmonary Tuberculosis. ALEXANDER ARMSTRONG, White Haven.

OUTLINE. Above name more expressive of the procedure than compression of lung or artificial pneumothorax. Rationale of measure for relief of pulmonary tuberculosis. Length of time procedure has been on trial; no longer in experimental stage. Technic, major operation, strict asepsis enjoined. Type of case best suited for treatment. Plea for its use in both earlier and later stage cases. Analysis of fifty cases treated during a period of three years. Cures by this treatment in writer's experience. Procedure a fixed place in our therapeutics; chance to many cases heretofore considered hopeless; psychologic effect good on patient, incentive to make harder fight, no ill effects following operation; not difficult to get permission and patients often request the doctor to continue treatment.

Discussion on papers 11 and 12 opened by CHARLES M. MONTGOMERY, Philadelphia.

13. Medical Education in China. (15 min.)
JAMES B. NEAL, Tsinan, China.

14. A Case of Cholesteatoma of the Spinal Cord.
WILLIAM EGBERT ROBERTSON and SAMUEL D. INGHAM, Philadelphia.

OUTLINE. A young woman, aged nineteen, first symptoms when fifteen, languor, anemia, slowly progressive loss of flesh, intermittent insomnia, motor and sensory disturbance of the left leg, and later of the right leg, variable in character, to some extent, with obstinate constipation and involvement of the bladder, with marked cystitis at the time she came under observation, and a peculiar mixed spastic and steppage gait. Operation by Dr. W. W. Babcock, removal of a tumor 5 1-2 inches long. Microscopically: A cholesteoma.

15. A Study of the Toxicity and the Comparative Therapeutic Effect of Mercury and Salvarsan in Experimental Trypanosomiasis.
JAY F. SCHAMBERG, JOHN A. KOLMER and R. W. RAIZISS, Ph.D. (by invitation), Philadelphia.

OUTLINE. Studies of the toxicity of the soluble and insoluble mercurial compounds; of distribution of mercury in animal body and resultant pathological changes. Effect on trypanosome infections of various mercurial salts. Studies of toxicity of salvarsan. Investigation of its trypanicidal influence. Chemistry of salvarsan. Interpretation of above findings and their application to treatment of syphilis.

16. Factors Influencing the Present Mortality in Peritonitis. (15 min.)
DAMON B. PFEIFFER, Philadelphia.

OUTLINE. Marked reduction in the mortality during past few years due to recognition of the principle of early operation and to evolution of improved operative methods. Further reduction depends upon a more general adoption of these measures and upon correct preliminary treatment. Present medical treatment founded upon incorrect reasoning and older teaching, and responsible for a large part of present mortality. Practitioners should adopt methods which surgeons have found to be most efficacious in general treatment of peritonitis. Simplicity and rationale of these methods.

Discussion opened by GEORGE G. ROSS, Philadelphia.

17. The Value of the Psychopathic Hospital.
DANIEL J. MCCARTHY, Philadelphia.

Discussion opened by JAMES HENDRIE LLOYD, Philadelphia.

18. The Treatment of Exophthalmic Goiter by Means of the Roentgen Rays, with Lantern Slide Demonstration.
GEORGE E. PFAHLER and J. DONALD ZULICK, Philadelphia.

OUTLINE. Symptoms due to hypersecretion of thyroid; disease often associated with enlargement of the thymus. General effect of Roentgen rays in large doses is production of atrophy and a suppression of glandular activity. Results of treatment are generally good, and without doing harm. First results to be noted are decrease in pulse rate, reduction of nervousness, and increase in weight. Treatment must not be carried to point of producing hypothyroidism.

Discussion opened by ARDREY W. DOWNS, Philadelphia.

SECTION ON MEDICINE.

OFFICERS OF SECTION.

Chairman—THOMAS GRIER SIMONTON, 5412 Ellsworth Ave., Pittsburgh.

Secretary—J. WESLEY ELLENBERGER, 922 North Third St., Harrisburg.

Executive Committee—CHARLES H. MINER, Wilkes-Barre; JAMES D. HEARD, Pittsburgh; ALFRED HAND, JR., Philadelphia.

TUESDAY, SEPTEMBER 21, 2 P.M.

1. Opening Address by the Chairman.
THOMAS G SIMONTON.

2. Clinical Findings of Foreign Bodies in the Air Passages of Children.
HENRY T. PRICE, Pittsburgh.

3. Pyelitis in Infancy. FRED E. ROSS, Erie.

OUTLINE. History of the disease. Study of twelve cases.

4. Treatment of Tuberculous Peritonitis: Medical *versus* Surgical.
THEODORE J. ELTERICH, Pittsburgh.

OUTLINE. Practical importance of treatment of tuberculous peritonitis. Results following laparotomy probably due to same general methods employed in medical treatment. Cases in which surgical interference is contraindicated. Hygiene, diet, local and internal remedies.

Discussion opened by JOHN F. SINCLAIR, Philadelphia.

5. The Incidence and Mortality Rates from the Communicable Diseases of Childhood; with Discussion as to the Influence Exerted on These Rates by Public Health Control.
B. FRANKLIN ROYER, Harrisburg.

Discussion opened by A. A. CAIRNS, Philadelphia.

6. Experience with the Intramuscular Injection of Diphtheria Antitoxin.
SAMUEL S. WOODY, Philadelphia.

7. The Results of the Examination of the Cultures from the Throats of Infants and School Children. George R. Moffitt, Harrisburg.

Outline. Varieties of organized forms found. Persistence of bacteria in apparently cured cases. Efficacy of lactic acid, as in buttermilk, in clearing throats of carriers. The organisms in Vincent's angina and organisms found in membranous croup.

Discussion opened by Seth A. Brumm, Philadelphia.

8. The Practical Value of the Schick Toxin Reaction in Diphtheria.
John A. Kolmer, Philadelphia.

Outline. Mechanism of toxin reaction. Investigation by author on true and pseudoreaction. Practical value of toxin reaction in diagnosis of diphtheria. Detection of susceptibility to diphtheria as a guide in administration of antitoxin for prophylactic and therapeutic purposes.

Wednesday, September 22, 2 p.m.

Reading of Minutes.

Report of Executive Committee.

Election of Officers.

9. The Heart of the Athlete.
Robert N. Willson, Jr., Philadelphia.

Outline. Striking number of recent deaths among former athletes. Methods of estimating harm sustained in competitive athletics. Fallacy of methods based upon visual or actual measurements of size of heart after exercise. Damage to cardiac structure often not immediately apparent. Methods of estimating limits of safety and danger in strenuous competitive exercise.

Discussion opened by R. Tait McKenzie and Judson Daland, Philadelphia.

10. The Criteria Underlying Prognosis in Cardiac Diseases. James E. Talley, Philadelphia.

Outline. Damaged heart under stress of anesthesia and operation, or acute diseases. Outlook in various myocardial and endocardial lesions.

Discussion opened by Joseph Sailer, Philadelphia.

11. Medical Limitations of the Electrocardiogram.
James D. Heard, Pittsburgh.

Discussion opened by Edward B. Krumbhaar, Philadelphia.

12. Some Points in the Treatment of Myocarditis.
James M. Anders, Philadelphia.

Outline. Influenced by type; acute or chronic, parenchymatous or interstitial. Influenced by cause; rheumatism, specific fevers, syphilis, etc. Remedies are rest, antirheumatics, antisyphilitics, cardiac stimulants, massage, resistive exercises. Inefficacy of digitalis.

Discussion opened by David Riesman, Philadelphia.

13. Hemoptysis as a Symptom of Tuberculosis.
Elmer H. Funk, Philadelphia.

Outline. Its frequency, prognostic value, treatment, etc., as based upon a study of five hundred advanced cases.

Discussion opened by Clarence R. Phillips, Harrisburg.

14. The Use of Tuberculin and Other Bacterial Preparations (Bacterins, Vaccines, etc.) by the Mouth. Solomon Solis-Cohen, Philadelphia.

Outline. Work of Latham, Spitla and Inman. Personal observations in the last five years. Results equal to those obtained by hypodermic method.

Discussion opened by John A. Roddy, Philadelphia.

15. Some Remarks on the Nature and Treatment of Asthma. David Riesman, Philadelphia.

Outline. Anaphylaxis in its relation to asthma. Report of case of milk asthma. Remarks on the treatment of asthma: during the attack; in the interval.

16. The Entire Inadequacy of Present Methods of Disinfecting Typhoid Stools.
Edgar M. Green, Easton.

Thursday, September 23, 9:30 a.m.

Reading of Minutes.

17. Thyroid Therapy.
William Harmar Good, Philadelphia.

Outline. Variability in organic products. Abnormal thyroid activity often associated with the reproductive function in women. Glandula thyroidea sicca the proper term. U.S.P. dose of four grains dangerously excessive.

Discussion opened by Myer Solis-Cohen, Philadelphia.

18. Pyorrhea and Its Complications.
Allen J. Smith, Philadelphia.

Discussion opened by Alfred Stengel, Philadelphia.

19. Chronic Arthritis.
Thomas McCrae, Philadelphia.

Outline. Etiology. Early diagnosis.

Discussion opened by William E. Robertson and A. Bern Hirsh, Philadelphia.

20. The Tertiary Manifestations of Syphilis as Seen in a General Medical Ward.
John H. Musser, Philadelphia.

Outline. Type of cases studied. Results of routine Wassermann examination of blood serum of each patient admitted to ward. Great frequency of cases of chronic disorders due to syphilis. Illustrative cases showing variability of lesions. Method of treatment employed. Results of treatment.

Discussion opened by Joseph Sailer, Philadelphia.

21. The Influence of High and Low Protein Intake on the Excretion of the Acetone Bodies (Acetone, Diacetic Acid and Betaoxybutyric Acid) in the Urine in Diabetes Mellitus.
Jacob Rosenbloom, Pittsburgh.

Discussion opened by Chauncey L. Palmer, Pittsburgh.

22. Diabetes Mellitus.
Adolph I. Ringer, New York City.

Discussion opened by Thomas McCrae, Philadelphia.

23. A New Treatment for Acute Bichlorid of Mercury Poisoning. J. Hartley Anderson, Pittsburgh.

Outline. Usual forms and doses. Pathologic anatomy. Analysis of fatal cases. Absorption, distribution, and elimination. Methods of treatment. Irrigation of the colon: physiologic effects. Cases treated to date.

Discussion opened by Horatio C. Wood, Jr., Philadelphia.

Reading of Minutes.

Adjournment.

SECTION ON SURGERY.

Officers of Section.

Chairman—Floyd E. Keene, 116 South Nineteenth St., Philadelphia.

Secretary—A. Ralston Matheny, 7032 Hamilton Ave., Pittsburgh.

Executive Committee—Otto C. Gaub, Pittsburgh; John B. Lowman, Johnstown; J. Torrance Rugh, Philadelphia.

Tuesday, September 21, 2 p.m.

1. A Study of the Muscle Metastasis in Carcinoma of the Breast.
John Speese, Philadelphia.

Outline. The object of the paper is to corroborate or disprove the rationale of the operation for the radical cure of breast carcinoma in which the fascia of the pectoral muscle only is removed. The study is based upon the histological examination of 100 consecutive cases.

Discussion opened by William L. Rodman, Philadelphia.

2. Treatment of Fractures, a Lost Art.
John B. Roberts, Philadelphia.

3. The Treatment of Complicated Fractures and Present Opinion of Operative Treatment.
John B. Lowman, Johnstown.

Outline. Should complicated fractures be treated by the open method, if so are the results better? Fractured femurs are best treated by the open method.

Discussion of papers 2 and 3 opened by William L. Estes, Bethlehem.

4. Acute Surgical Diseases of the Pancreas.
John B. Deaver, Philadelphia.

Discussion opened by Ernest Laplace, Philadelphia.

5. Pancreas and High Intestinal Obstruction.
J. Edwin Sweet, Philadelphia.

Outline. Cause of death in an acute pancreatitis and in high obstruction is the same. Proteolytic ferments of the pancreas. Results of investigations. Conclusions.

Discussion opened by J. Chalmers DaCosta, Philadelphia.

6. Management of Toxic Goiter.
Charles H. Frazier, Philadelphia.

Outline. Necessity for discrimination between early gravely acute and terminal phases in selection of treatment. Thymus enlargement as factor to be considered. The early and late results. The after-treatment and the prevention of recurrences.

Discussion opened by John DeV. Singley, Pittsburgh.

7. Rectal Anesthesia in Thyroidectomy.
Walter Lathrop, Hazleton.

Outline. Preliminary remarks on oil ether anesthesia, Gwathmey's method; use of chlorotome; paraldehyd; or novocain-adrenalin; with preliminary dose, and the mixture finally used. Contraindications; Personal experience; Conclusions.

Discussion opened by John W. Luther, Palmerton.

Wednesday, September 22, 2 p.m.

Reading of Minutes.

Report of Executive Committee.

Election of Section Officers.

8. Surgical Treatment of Ascites.
Robert T. Miller, Jr., Pittsburgh.

Outline. Proper time for surgical intervention. Review of the various surgical treatments. Method of draining the ascitic fluid into the blood stream by implantation of the saphenous vein into the peritoneum. Report of cases.

Discussion opened by James D. Heard, Pittsburgh.

9. Fulguration Treatment of Bladder Papilloma.
Alexander A. Uhle and William H. Mackinney, Philadelphia.

Outline. Benign and malignant papilloma, the relation of their pathology to the selection of proper form of treatment. Clinical features of tumors that prove amenable to fulguration. Technic. Results in benign and malignant papilloma. Complications. Recurrences.

Discussion opened by John L. Laird, and Benjamin A. Thomas, Philadelphia.

10. Membranous Pericolitis or the Pericolic Membrane. Jabez N. Jackson, Kansas City, Mo.

Outline. A physiological and clinical entity. Of rare occurrence; many cases are improperly so classed. The genuine type presents typical symptoms and should be diagnosed. Pseudo cases should be let alone. Some interesting problems of etiology and their bearing on treatment. Treatment, medical and surgical.

Discussion opened by George P. Müller, Philadelphia.

11. Treatment of Empyema.
Edward Martin, Philadelphia.

Outline. The first operation on an empyema is too often not the last. An empyema should not become chronic; Drainage usually employed inadequate. Author's method.

Discussion opened by John B. Carnett, Philadelphia.

12. Treatment of Puerperal Infection and Septic Abortion. John M. Fisher, Philadelphia.

Outline. Conservative views. Radical interference. Bacteriology. Treatment of special symptoms. Conclusions.

Discussion opened by Thomas B. Carroll, Pittsburgh.

13. Prevention of Fecal Fistula in Suppurative Appendicitis. Donald Guthrie, Sayre.

Outline. Technic of operation. Employment of drainage. Postoperative treatment. Review of cases.

Discussion opened by Claude L. Bradford, Pittsburgh.

14. Treatment of Cancer by the Use of Radium in Conjunction with Surgery.
Guy C. Boughton, Erie.

Outline. The treatment of nonoperative cases of malignancy and the use of radium following surgical treatment. Case reports.

Discussion opened by Russell H. Boggs, Pittsburgh.

Thursday, September 23, 9:30 a.m.

Reading of Minutes.

15. Surgical Treatment for Absent Vagina.
E. E. Montgomery, Philadelphia.

Outline. The ethical question. Previous operations. Author's operation. Lantern slide demonstrations.

Discussion opened by Brooke M. Anspach, Philadelphia.

16. Morbidity in Appendicitis.
George P. Müller, Philadelphia.

Outline. The analysis of 400 csaes of acute appendicitis. A discussion of the relation to the mortality. Technic of the relation of operation to the postoperative complications.

Discussion opened by John A. Klump, Williamsport.

17. Technic of Applying Heat in Treatment of Inoperable Carcinoma of Uterus.
James F. Percy, Galesburg, Ill.

Outline. Technic of applying heat of utmost importance. Description of instruments. Lantern slides.

Discussion opened by John G. Clark, Philadelphia.

18. Treatment of Undescended Testes.
John H. Gibbon, Philadelphia.

Outline. The preoperative treatment and the operative technic. The end results of reported cases.

Discussion opened by Robert G. LeConte, Philadelphia.

19. Operation for Inguinal Hernia.
Francis T. Stewart, Philadelphia.

Outline. Preparation. Importance of bilateral examination, and exploration during operation. Removal of sac. Sliding hernia. Hernia of bladder. Closure of wound. Transplantation of flaps. After care.

Discussion opened by J. S. Rodman, Philadelphia, and E. W. Meredith, Pittsburgh.

20. The Operative Treatment of Intestinal Cancer.
Levi Jay Hammond, Philadelphia.

Outline. When should the operation of colectomy be completed in one stage, which is the one of choice? When in two stages, and when must colostomy alone suffice? Analysis of cases operated on.

Reading of Minutes.

Adjournment.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Officers of Section.

Chairman—Robert Milligan, Westinghouse Building, Pittsburgh.

Secretary—John F. Culp, 410 North Third St., Harrisburg.

Executive Committee—Wendell Reber, Philadelphia; Chevalier Jackson, Pittsburgh; Howard F. Hansell, Philadelphia.

Tuesday, September 21, 2 p.m.

1. Opening Address by the Chairman.

Robert Milligan.

2. The Vaccine Treatment of Chronic Suppurative Otitis Media.

George M. Coates and Matthew S. Ersner, Philadelphia.

Outline. Résumé of the literature showing value of vaccines in chronic running ears. Class of cases in which success may be looked for. Combination with other methods of treatment. Comparative values of autogenous, stock (laboratory or commercial) and sensitized. Dosage. Report of series of cases and individual cases of interest. Dangers and contraindications. Conclusions.

Discussion opened by John A. Kolmer, Philadelphia.

3. Ethmoiditis. Its Various Effects and Their Probable Prevention; or, When Fully Established, Their Possible Cure.

J. Leslie Davis, Philadelphia.

Outline. Ethmoid cells may cause greatest variety of complications, secondary and reflex pathologic processes, probably preventable, or amenable to treatment in incipiency, and even when established may be mitigated by surgical measures, if not cured. Predisposing factors, local and constitutional. Acute infections, symptoms and pathology. Ultimate effects of repeated infections, long-continued low-grade inflammations and chronic suppurations. Reflex symptoms, embracing all forms of neuralgic pain, headache, vertigo, dizziness, ocular disturbance, tinnitus aurium, etc., and their significance. Prophylaxis and treatment.

Discussion opened by Gilbert D. Murray, Scranton.

4. Syphilis of the Nose and Throat.

Charles P. Grayson, Philadelphia.

Outline. Regrettable frequency and severity of syphilitic involvement of nose and throat. Prevention quite possible. Occasional instances of primary infection. Importance of clinical diagnosis. Atypical features of many cases. Mixed infections. Treatment, prophylactic and curative.

Discussion opened by George B. Wood, Philadelphia.

5. Syphilis of the Ear.

S. MacCuen Smith, Philadelphia.

Outline. The importance of an accurate diagnosis, particularly in the presence of labyrinthine involvement. Worth of Wassermann reaction. Value and danger of salvarsan injections.

Discussion opened by E. B. Gleason, Philadelphia.

6. Visual Disturbances Occurring in Pregnancy.

Glendon E. Curry, Pittsburgh.

Outline. Visual disturbances in pregnant women more frequent than supposed. Mostly caused by toxic retinitis or neuroretinitis. Dropsical or dry variety, the former less serious, due to nonelimination of chlorids; the latter caused by retention of urea may be associated with structural changes. Albuminuria significant but not necessarily present. Ophthalmoscopic observations important. Serious nephropathies may be avoided when prompt diagnosis is made. Prognosis good when decisive action is taken to end toxemia.

Discussion opened by Burton Chance, Philadelphia.

7. Uveitis. George B. Jobson, Jr., Franklin.

Outline. Causes, dietetic, toxic or infectious. Characteristic symptoms. Moderate deepening of anterior chamber, uncontracted pupil, haziness of cornea and aqueous humor, a precipitate of opaque dots on posterior part of cornea, generally arranged with apex pointing upward. Tension may be increased in first stage. Treatment depends upon type or character of disease. Locally, the author depends principally upon subconjunctival injections of salt solution, dionin and application of high-frequency electric current.

Discussion opened by William Campbell Posey, Philadelphia.

8. Intrarectal Use of Sodium Salicylate in Uveitis, with Report of Cases.

J. Ferdinand Klinedinst, York.

Outline. Value of intrarectal administration of sodium salicylate in large doses. Ease of administration, with rapid absorption of drug. Quick systemic effects and lessening of symptoms of disease. Report of cases.

Wednesday, September 22, 2 p.m.

Reading of Minutes.

Report of Executive Committee.

Election of Section Officers.

9. Some Points on the Applied Anatomy of the Temporal Bone (by invitation). (20 min.)

D. Gregg Metheny of the Daniel Baugh Institute of Anatomy, Philadelphia.

Outline. Size and position of the mastoid antrum. Course and position of the facial nerve and chorda tympani. Position and course of the lateral sinus. Position and relations to each other of the semicircular canals.

Discussion opened by S. MacCuen Smith, Philadelphia.

SYMPOSIUM ON THE EYE.

10. Heterophoria and Its Management.

William W. Blair, Pittsburgh.

Outline. Prevalence of heterophoria accompanying refractive errors; importance of routine testing of the muscle balance; methods employed; important part played by the fusion faculty in the development of faulty muscle balance; methods of treatment.

Discussion opened by William Zentmayer, Philadelphia.

11. The Operative Treatment of Strabismus.

Howard F. Hansell, Philadelphia.

Outline. Cases incurable by other means curable by operation, and operation to be chosen. Creation or restoration of binocular vision a result to be gained only when fusion sense exists or may be developed and vision of eyes approximately the same. Patient and surgeon usually satisfied with correction of deformity. Success depends upon causes which have brought about malposition of eye in orbit, correct estimation of relation between contracting and antagonistic muscles and technic of surgical procedure. Operation varies according to exigencies of individual case, and comprises single and double advancement, with or without tenotomy of one or more opposing muscles. Internal, external and vertical strabismus.

12. Nonoperative Treatment of Squint.

Wendell Reber, Philadelphia.

Outline. Largely confined to children under ten years of age. Convergent strabismus in children of three varieties: Binocular or alternating, intermediate, and monocular. Strictly monocular form not as prevalent in children under ten as over that age. Nonoperative treatment consists in the best possible refraction under thorough cycloplegia; bifocal glasses; fusion training with amblyoscope, diploscope, Harman's diaphragm apparatus (or modified bar reading), the ordinary stereoscope with special and general pictures, the use of the monocular binder, and the use of atropin in one or both eyes.

Discussion on papers 11 and 12 opened by James Thorington, Philadelphia.

13. Ophthalmia Neonatorum. The Exclusive Use of Iced Normal Salt Solution in the Treatment of Gonococcic Purulent Conjunctivitis of the Newborn or Adult. Edward B. Heckel, Pittsburgh.

Outline. Observations, hypotheses and conclusions based upon our definite knowledge of the morphology, cultivation, resistance and pathogenicity of the *Diplococcus gonorrheae* or commonly known gonococcus of Neisser.

Discussion opened by Edward Stieren, Pittsburgh.

14. Bronchoscopy in Suspected Bronchiectasis, Empyema and Pulmonary Tuberculosis.

Chevalier Jackson, Pittsburgh.

Outline. Frequency of bronchiectatic symptoms from unsuspected foreign bodies as the cause of bronchiectasis. Close similarity between symptoms of "drowned lung" condition and late pulmonary tuberculosis. Essential difference between "drowned lung" and pulmonary abscess. Similarity of physical signs of "drowned lung" and empyema. Case reports.

Discussion opened by D. Braden Kyle, Philadelphia.

Thursday, September 23, 9:30 a.m.

Reading of Minutes.

15. Etiology and Treatment of Trachoma.
Charles S. Rebuck, Harrisburg.

Outline. Definition. Etiology, climatic conditions, racial factors. Specific. Clinical varieties. Symptoms, subjective, objective. Treatment, prophylactic, hygienic, medicinal, surgical. Clinical results of treatment.

Discussion opened by L. Webster Fox, Philadelphia.

16. Scotomas in Diabetes.
Edward Stieren, Pittsburgh.

Outline. Central, paracentral or sectoral; usually permanent but may be transient. Study of a series of cases suggests possibility of their being due to an intoxication of the cortical visual area followed usually by degeneration of certain cortical fibers or cells.

Discussion opened by George E. deSchweinitz, Philadelphia.

17. A Case of Palsy of the External Rectus Muscle, with Operation.
Clarence M. Harris, Johnstown.

Outline. Congenital palsy; usual lack of rotation; transplantation of sections of vertical muscles; photographs.

18. Otitic Brain Abscess with Report of an Unusual Case. William Hardin Sears, Huntingdon.

Outline. Most common of all forms; follows chronic more often than acute ear suppurations; more frequent at certain periods of life. Infection by direct extension; by phlebitis and thrombosis of veins leading to cranial cavity; by passage of infecting organisms through spaces in sheaths of vessels and nerves; rarely by way of aqueductus vestibuli. Location, typical; in temperosphenoidal lobe or cerebellum on side of affected ear, very rarely on opposite side. Capsular formation. Usually single, may be multiple. Symptoms vary in different stages, in acute and chronic types. Pain, vomiting, slow pulse, subnormal temperature, slow cerebration, ocular changes, nystagmus, forms of aphasia and paralysis prominent symptoms, not all or always present in same case. Diagnostic difficulties. Course and prognosis. Report of a case.

Discussion opened by George W. Mackenzie, Philadelphia.

19. Perisinuous Abscess and Sinus Thrombosis.
Harvey M. Becker, Sunbury.

Outline. Diagnosis of cases in absence of classical symptoms; importance of early operation in a conservative manner, so as not to disturb Nature's circumscribing and walling-off process; infrequency of thrombosis below bulb when operated on early.

Discussion opened by S. MacCuen Smith, Philadelphia.

20. The Rôle of Rhinologist in Hypophyseal Surgery. Lyndon H. Landon, Philadelphia.

Outline. Introduction. Pituitary lesions from the surgical standpoint. Extracranial routes to the sella. Superiority of endonasal submucous approach. Lesions suitable for this attack. Preparation, operation and aftercare. Complications and results. Lantern demonstration of cases, the anatomy and technic of the various routes.

Discussion opened by Thomas B. Holloway, Philadelphia.

21. Internal Medication in the Treatment of "Catarrh" of the Upper Respiratory Tract.
George R. S. Corson, Pottsville.

Outline. Commonly overlooked by the laryngologist. Review of various bacteria as an etiologic factor in rhinopharyngitis. Importance of use of bacterial vaccines. Certain drugs are eliminated from the body through the mucous glands. Advantage of a knowledge of this therapeutically. Attention to all organs of the body important.

Reading of Minutes.

Adjournment.

OPEN MEETING FOR WOMEN.

EGYPTIAN HALL OF WANAMAKER'S STORE.

Wednesday, September 22, 2 p.m.

Chairman—Catharine Macfarlane, Philadelphia.

SYMPOSIUM ON PRENATAL CARE—THE REAL WELFARE OF MOTHER AND CHILD.

In Private Practice.
Elizabeth L. Peck, Philadelphia.

In Hospital Practice.
Lida Stewart-Cogill, Philadelphia.

In the Prevention of Infant Mortality.
Eleanor C. Jones, Philadelphia.

Report of the Work of the Emergency Aid Committee. Mrs. J. Willis Martin, Philadelphia.

PUBLIC MEETING.

Thursday, September 23, 8 p.m.

ROSE ROOM.

The Public and the Profession—A Square Deal.
Henry B. Favill, M.D., Chicago, Chairman of the Council on Health and Public Instruction of the American Medical Association.

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D. Appleton and Company, New York, N. Y.
Bernstein Manufacturing Company, Philadelphia.
P. Blakiston's Son and Company, Philadelphia.
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ORIGINAL ARTICLES.

MYOCARDIAL INSUFFICIENCY.

BY U. GRANT GIFFORD, M.D.,
Avondale.

(Read at a joint meeting of the Chester and Berks County Medical Societies, Valley Forge, July 13, 1915.)

Myocardial insufficiency is largely a mechanical condition. It presents diminished cardiac energy on the one hand, and increased demand for energy on the other. In the consideration of the condition, we do not confine ourselves strictly to the study of hearts which are doing less than normal work; they may be doing much more, but, loaded with leaking valves or high arterial pressure, or both, they easily fall into this class. We must make a distinction between inefficiency and insufficiency. Many hearts continue for years to contract regularly seventy-two times per minute, and expel the normal sixty cubic centimeters of blood against an arterial pressure of two hundred millimeters of mercury, while, under normal conditions, they would be required to expel the same amount of blood with the same frequency against a pressure of but one hundred and forty or one hundred and fifty millimeters. Such hearts are insufficient because they have less than the normal amount of reserve with which to meet the increased demands of exercise, and the many physical and mental strains incident to life.

Myocardial insufficiency exists when a heart with normal valves does not possess sufficient power to drive a normal amount of blood with normal velocity through a normal vascular system. This is positive, intrinsic, vital defect. It also exists when valvular disease imposes a burden by leakage greater than the heart can compensate for, and where high arterial pressure increases the energy required to accomplish a given efficiency of circulation. Under these conditions, insufficiency is relative, extrinsic, mechanical. However, we find only rare cases that easily fit and remain in one or the other of these classes, as sooner or later, such cases will include features common to both. The normal heart of a normal individual below thirty with a body at rest does not use more than one twelfth of its potential energy, the balance being held in reserve. At moderate work one fourth or one third is used, and the full capacity only in the severest forms of exercise and tests of endurance. With the body at rest, sixty cubic centimeters of blood are expelled with each systole, and this occurs seventy-two times per minute. With increased demands on the heart, its speed is increased, doubled or even more, and the sixty cubic centimeters expelled with each stroke, doubled, trebled or, according to Plesch, increased even sixfold. This wonderful capacity of the heart to carry increased loads, and to adapt itself automatically and instantly to changing demands on its resources is the factor of safety in cardiac mechanics. Encroachment on this factor is the most characteristic feature of myocardial insufficiency. In proportion to the degree of encroachment is the myocardium insufficient. In the intrinsic vital form of myocardial insufficiency, the cardiac muscle has less than normal power to respond to increased demands, and in the extrinsic, mechanical form (valvular diseases or high arterial pressure) it is handicapped by the load it carries, and, in both classes, the factor of safety is reduced in proportion to the severity of the existing condition. The heart under these conditions can not, at any time or under any circumstances, have the proportionate maximum relief that bodily rest should afford. The immediate and inevitable result of these changes is impairment of myocardial nutrition.

The factors of complete nutrition of the myocardium are: (1) Proper relative rest for the heart while the body is in repose; (2) normal diastolic pause; (3) sufficient blood supply to the myocardium; (4) proper oxygen content of the blood supplied; and (5) normal freedom of this blood from the products of waste and fatigue toxins.

1. Of the first factor little more need be said. If, under existing cardiac conditions, while the body is at rest, the heart is required to expend one fourth of its potential energy instead of the normal one twelfth, it is evident that it does not enjoy the proper relative rest in which to recuperate from previous effort.

2. In the normal heart increased work of the body is met by increased speed of the heart. In the insufficient heart lesser degrees of work beget increase in the heart rate, and the same degree of work begets more than the normal increase in speed. The quickened heart rate is principally at the expense of the diastolic pause, and, as this pause is the period of rest and recuperation, it follows that the nutrition of the heart suffers in proportion to the shortening of this phase.

3. The amount of blood received by the myocardium is governed; first, by the force of the ventricular systole; second, by aortic pressure; and, third, by patulency of the coronary arteries. The older theory that the coronary arteries receive blood only during the cardiac diastole, and from aortic pressure has been abandoned. It is now known that, during the first part of the ventricular systole, blood enters the coronary arteries by direct cardiac force, and that this continues until the pressure of the ventricle exceeds the pressure in the artery; at this time the current ceases, and is resumed when the ventricle relaxes in diastole by the pressure in the aorta. In other words, there are two distinct admissions of blood in the coronary arteries to each stroke of the heart. The first commences with the advent of the ventricular systole and continues until the lateral pressure, exerted on the walls of the coronary arteries by the contraction of the heart muscle in which they lie, is sufficient to obliterate their lumen. The second occurs during the diastole from aortic pressure. Thus the pressure tracing of the coronary arteries would show an abrupt rise during the first part of the systole, then a fall to zero when the diastolic contraction reaches the maximum, followed by the diastolic rise while the ventricle is relaxed. It is readily understood by this that the weak systole and low blood pressure of the vital form of insufficiency will reduce the blood supply to the heart muscle, and the hardened arteries of arteriosclerosis in the mechanical form will serve the same purpose.

4 and 5. The fourth and fifth factors are conveniently considered together. Normal oxygen content of the blood, received by the myocardium, and normal freedom from waste matters and fatigue stuffs are essential to perfect cardiac nutrition. Under normal conditions of the circulation, any disturbance of these factors is temporary, and whatever embarrassment the heart suffers from these lapses is soon mended, and no lasting harm results. Conversely, constant deficiency of oxygen and excess of waste and fatigue products make perfect heart nutrition and repair impossible. When the heart carries a burden, not well borne, and the circulation is imperfect, oxygenation of the blood is imperfect, and, coincidently and proportionately, waste products accumulate, thus depriving the myocardium of its proper and necessary supply of oxygen on the one hand, and poisoning it on the other. Furthermore, these conditions are incompatible with the proper assimilation of food stuffs by the organism at large, and the heart is deprived of the necessary nutritive pabulum required to replace the wear and tear of its tissue.

The problems, then, which we have to solve in the rational treatment of myocardial insufficiency are those involved in overwork and under-nutrition of the heart muscle. They are to be met by teaching the victim of these conditions so to regulate his life that the expenditure of cardiac energy may lie well within cardiac income, and to treat his myocardial reserve as the prudent business man does his bank balance, not to check out more than he deposits. The lives of such people must be regulated in such manner that the relative cardiac relief obtained by physical rest is not neglected, that physical exercise is not carried to the point of interfering seriously with the diastolic pause, and that the blood supply is augmented in every manner possible,—the oxygen content of the blood kept constantly at the maximum, waste products at the minimum, and the nutritive pabulum the best possible under the circumstances. In our efforts to meet these conditions in the application of our therapeutic resources, we must recognize the needs of the case in question. Is the condition mild, moderately severe or severe? But the severity of the case does not alter the principles of treatment. Their application is merely modified to meet the needs of the individual case.

To obtain the required relative cardiac rest in all severe cases of insufficiency, we must rely chiefly on physical rest, partial or absolute as the case may require, but always sufficient to reduce the expenditure of cardiac energy to a point well within the heart's income. If this is not possible, the rest must be absolute and the expenditure of cardiac energy reduced to the lowest possible minimum. The patient must be put to bed in a well ventilated room and kept in a position as near horizontal as his dyspnea will permit. He must have mental as well as physical rest. The ordinary cares of business life must be laid aside, and the petty annoyances of life excluded. The digestive organs must be relieved by taking digestible food in small quantities at frequent intervals. A full stomach is an abomination to a weak heart. The daily intake of fluid must be merely enough to supply the daily needs. The intestinal tract must be kept freely active, and accumulations of gas especially guarded against. Straining at stool, as it increases blood pressure, must not be permitted. Visitors should be infrequent, and the voluble, tactless type absolutely excluded. Peace of mind must be added to physical and mental rest.

To lengthen the diastolic pause and increase the flow of blood to the myocardium, we rely chiefly on the digitalis group of cardiac tonics. Recent experience has conclusively shown that medicinal doses of these agents do not (except for very short periods and in a few cases) increase arterial pressure. The characteristic and important action of digitalis is to increase the output of blood with each ventricular contraction, to increase the amplitude of the pulse, and to lower the diastolic pressure.

In this connection, it must be recalled that the inception of the ventricular contraction is opposed, not by the systolic but by the diastolic pressure, and, in proportion to the difference in the two readings, the energy exerted by the systole is made more effective. With increased volume of blood expelled from the ventricles at each contraction, the amount received by the coronary arteries is increased. Medicinal doses of digitalis do not constrict these vessels. The effect, then, of digitalis is to increase the energy of the cardiac muscles, to increase the output of blood with each contraction (even to double it in some cases), to lengthen the diastole, thus permitting the required rest, and to increase the amount of blood received by the coronary arteries. Increased activity of the circulation insures better oxygenation, improved elimination through the lungs, and diuresis, all essential to nutrition of the heart, and to the reduction of the load it has to carry. In order, however, to attain these results, we must be assured of two things; the heart must have a sufficient amount of unimpaired muscular substance to respond safely to stimulation, and the dose must be sufficient. The therapeutic dictum of S. Solis-Cohen that "the correct dose of any drug is enough, and no more" is nowhere more applicable than in the administration of digitalis. The dose of this drug, as ordinarily given, is too small. When it is less than sufficient to increase the ventricular output, increase the amplitude of the pulse and produce diuresis, it is of no value.

Digitalis, when widely used, so far exceeds in value all the other cardiac tonics that their mention is almost superfluous. Strychnin may rarely be used alone with advantage, and only with the purpose of stimulating the spinal nervous system and digestion, rather than with any idea of improving the heart directly. It may at times be a useful adjunct to the digitalis group. Caffein is useful when a diuretic effect is desired, and when we need to add to digitalis some agent that will favorably influence the cerebral functions.

The carbon dioxid baths are too little used and their value is too little appreciated. The artificial Nauheim baths are not difficult in many houses, and, if properly understood and used, should be made to serve an excellent purpose in many cases. While rest has been insisted upon as the most essential item in many cases, it is not to be forgotten that exercise is just as useful in others. Rest does not develop muscular tissue. It merely conserves energy, while exercise develops the power to produce energy. It also favors elimination and increases the constructive metabolism of the body.

The purpose of the Schott resistance exercises, the Oertel terrain cure, the Zander mechanical gymnastics and the Herz system of movements is simply to increase the working capacity of the heart by carefully prescribed and graduated amounts of work so adjusted as to meet the needs of the case that at no time will the work imposed on the heart embarrass it, and yet will be sufficient to increase the blood supply to the cardiac muscle. The advantage of regulated, controlled exercise over that left to the whim and impulse of the patient is easily manifest, especially in the many cases where "a little more than a little is much too much."

It is, of course, desirable to develop the heart to its highest possible efficiency, but a careful trainer in preparing a horse for a two-minute mile does not extend him to his limit each day, nor does a football trainer work his team daily to the point of fatigue. Exercise to be of value must be mixed like Mr. Opie's paints "with brains, Sir."

The use of vasodilators to reduce blood pressure and to lessen the load the heart carries is sometimes desirable, but blood pressure should not be reduced to a point (if this is ever possible) where the efficiency of the circulation is below the needs of the individual.

Temporary and extreme elevation of blood pressure (the hyperpiesis of Clifford Albutt) is more to be avoided than treated, but, if recognized, treated vigorously. It is during these periods that the heart is most apt to give up suddenly the struggle and the cerebral vessels rupture.

In the vital form, most frequently the result of myocarditis (the chronic type, resulting from the acute form, usually a sequence of infections), we have to deal with progressive decline of cardiac energy. In such cases, a recurrence of the original infection, or the occurrence of any other likely to effect the heart is much to be dreaded, and should, if possible, be avoided by so ordering the life of the patient that such accidents are least likely to occur. If, unfortunately, such infections do occur, they must be most vigorously and carefully treated. Here absolute rest is an absolute necessity. But despite all our care and the employment of our best therapeutic resources, there will be a time, long postponed perhaps but in many cases inevitable, when the weakened and insufficient heart will incur a debt to every organ in the body, and the end will come as the result of an accumulated deficit of cardiac energy.

INFECTIONS OF THE HAND AND THEIR MANAGEMENT.

BY S. J. WATERWORTH, M.D.,
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(Read before the Clearfield County Medical Society, April 14, 1915.)

My reasons for choosing this subject are: (1) Because of the great importance to the individual of the hand as a link between himself and his environment. I believe from a practical standpoint that the average man could stand better the loss of an eye than the loss or maiming of the hand he is in the habit of using most; (2) because it is a fact, that infections of the hand are often treated in a perfunctory manner; (3) because of having my own interest and surgical conscience quickened by some recent writings, notably those of Allen B. Kanavel of Chicago and Prof. Bier of Berlin, from whose monographs I have profited very much.

THE CAUSATION.

Infection of the hand may follow any variety of wound which allows a place of entrance for pathogenic microörganisms and at the same time produces a local minor resistance, as any of the various kinds of wounds may be followed by infection. So the different forms of infection are various, depending upon the specific infecting agent, or a mixed infection may be present.

The pathology of hand infection is the same as that of infections elsewhere, only modified by the anatomical characteristics of the part, and is a very long story, which I shall not attempt to tell from an academic standpoint but entirely from a standpoint of treatment, and will touch upon it only as it may be necessary to understand how to apply intelligent treatment to the various types of infection.

The character, course and duration of the infection may be considerably modified by the constitutional state of the patient (for instance, those suffering from diabetes, Bright's disease, alcoholism, etc., show a lessened resistance), by the amount of traumatism caused by the injury, by the character of the specific infection present, by the anatomical peculiarity of the part of the hand infected, and by the stage of the case at the time of the patient's coming for treatment.

Felons often lead to early necrosis of the distal half of the distal phalanx, owing most likely to the edema and infiltration early causing pressure obstruction of blood supply, although two or three other theories have been advanced.

Lymphangitis of the little and the ring fingers may cause suppuration of the epitrochlear gland, infection of the forefinger or thumb, or abscess of the axillary glands; while the lymph drainage from the middle finger may go over the clavicle into the circulation, through the lymphatic gland of the subclavian vein, or we may have thrombophlebitis followed by septic pyemia and metastatic abscess in the lung, brain, kidney or pericarditis or empyema, or we may have a thrombus become loose and lodge as an embolus in the pulmonary artery.

Palmar abscess often leaves a maimed hand on account of the destruction of tendons.

PROPHYLAXIS.

Many severe cases of hand infection could be prevented if there should be enacted a law, carrying penalties for failure to follow its observance and as well enforced as the vaccination law. This law should provide that in all public works instructions be given for injured employees to report at once to their foreman, or other especially designated person, whose duty it would be to keep on hand tincture of iodin and small packages of aseptic gauze, and to pour the tincture of iodin solution into and around the wound without preliminary washing or messing of any kind and then to apply a dressing and bandage lightly, ordering the injured one to go at once to a doctor, a hospital or a dispensary where further appropriate treatment could be instituted.

TREATMENT.

I believe the first thought in the treatment of felons should be to relieve tension by very early incision before pus is formed. The incisions in the early cases need not be large but should be over the spot of extreme tenderness and should be followed by hyperemia produced by the use of the rubber band intermittently applied, and just tight enough to produce slight redness (never blueness). This should never be applied before an incision has been made under strict antiseptic precautions, and if it causes discomfort, it should be removed immediately. Suction hyperemia may be produced with the glass cup, or active hyperemia by the immersion of the finger in hot lysol, boric acid or weak bichlorid solution. Always bear in mind that the incision is first and hyperemia is second and that after the incision the part is regarded as an open wound and treated with aseptic or antiseptic precautions to avoid a mixed infection.

I would like to speak a word of caution as to bandaging. The infected finger should be covered between the times that it receives attention at the hand of the doctor with a very loose aseptic dressing, because a tight or even a firm dressing will favor capillary anemia, which in turn will favor necrosis of the infected tissues.

If one sees the case later when destructive changes are threatened or already present, then free incision should be made, not where so often I have seen the scar, right in the middle of the palmar surface where it remains as a constant source of nuisance to the patient and an ambulatory monument to the doctor who attended the case, but to one side avoiding the matrix of the nail or at the distal end from side to side just beyond the nail. Necrosed areas should be removed gently so far as possible to avoid opening up new lymphatic areas to become infected. Where the case has gone to necrosis of the bone it should be remembered that the epiphysis rarely is involved and that we should content ourselves with the removal of the diaphysis.

Paronychia or "run around" is often very troublesome and sometimes long continued under the usual manner of treatment. The keynote here also is relief of tension and drainage. To obtain this, one should make an incision parallel to the outer borders of the involved nail, avoiding the nail or its matrix and carrying the incision high enough on the finger to reach the bottom of the sulcus. Then push back the eponychium lifting up the base of the nail, which will be found quite loose, turn it out with sharp-pointed scissors, leaving, however, the distal portion of the nail which is still attached. Pack lightly the space thus uncovered to secure capillary drainage and then use hyperemia and antiseptics by moist hot dressings and the rubber band lightly applied at the most proximal part of the finger.

Superficial lymphangitis of the hand should be treated by absolute rest of the part, because muscular action increases the rapidity of the lymph flow towards the body as well as disturbing and irritating the infected areas. Most authorities advise against incision in this condition, unless localized areas of suppuration occur; preferring the use of active hyperemia by means of hot boric acid packs or moist, hot and abundantly large dressings of weak solutions of lysol, creolin, bichlorid or dilute alcohol. Laplace advocates multiple and numerous scratchlike incisions across the long axis of the part and the application of the ice-cold drip of 1-5000 bichlorid acidulated with citric acid, claiming that the cross incision which is just deep enough to open up the superficial lymphatics, interrupts the lymph flow and allows it to drain out while the application of cold lowers the virulence of the bacteria present.

Personally I have had very excellent results with this method in superficial lymphangitis, but I believe that in the phlegmonous form, or where the fascial spaces or tendon sheaths are involved, active hyperemia should be produced by the hot mildly antiseptic pack and possibly the rubber band, the latter especially where incision has been made, because I believe we can to some extent lessen the amount of toxins poured into the circulation by the judicious use of this means, as well as cause a pouring out of the serum at the site of incision.

In the type of cases involving the deep lymphatics it is of the utmost importance to watch for and make early diagnosis of suppuration in order to incise and relieve tension early.

TENDON-SHEATH INFECTION.

When the diagnosis of tenosynovitis is made, the first thing to do is to incise, making the incisions in the case of the fingers laterally upon the palmar surfaces, sparing the part over the articulation to avoid prolapse of the tendon. Err rather on the side of too free incision than too small a one, the most important point being a free opening for drainage; in those cases where it seems better judgment to incise the whole length of the finger the finger should be put up in extension and an effort made to prevent the displacement of the tendon. In the palm the incision is made proximal to the flexion crease for about three fourths of an inch upward.

Infection of the tendon sheath of the little finger should be treated as noted in connection with the other fingers. Care, however, should be taken not to open the ulnar bursa unless it is already infected, as the infection will spread through the means of this bursa up into the forearm beneath the deep flexors. Should it be necessary to open the ulnar bursa, an incision is made from the base of the proximal phalanx at the distal flexion crease, and passing up to the base of the palm up to the anterior annular ligament; then a lateral incision should be made an inch and a half above the tip of the ulna on its flexor surface, down to the bone, and an artery forceps thrust beneath the deep flexor until the point is felt upon the radial side which should be cut down upon making through and through drainage.

Infection of the thumb involving the sheath of the flexor longus pollicis rarely breaks into the thenar-tissue space but more often ruptures into the forearm beneath the flexor profundus digitorum where it can be drained by lateral incision.

Infection of the thenar space is usually an extension of the tendon-sheath infection of the forefinger and should be treated by incision over the lumbricale muscle to the dorsal side of the web between the thumb and the index finger, thrusting an artery forceps into the thenar space and opening the jaws, being careful not to go so far as the palmar surface of the metacarpal bone of the middle finger for fear of opening and causing infection of the mid-palmar space.

The mid-palmar space may become infected secondarily through extension from the tendon-sheath of the middle, ring or little finger most often through the lumbricalis spaces; or the space may be directly infected by direct puncture or extensive crushing injuries, and possibly this space as well as the thenar may be the seat of suppuration due to direct lymphatic extension.

Infections of the palm from the middle and the ring fingers are treated by incision into the palm carried one fourth of an inch proximal to the transverse line joining the flexion creases, after which an artery forceps is inserted beneath the palmar tendons toward the ulnar side, and the mid-palmar space is opened and drained.

The superficial lymph channels of the palm pursue the shortest route to the dorsum of the hand and the infection of the superficial lymphatics of the distal part of the palm would go between the web of the fingers to the subcutaneous tissue of the dorsum.

Where localized abscess forms, it may be troublesome to differentiate it from lymphangitis upon the dorsum which causes great swelling, and as the treatment is distinctly different, it is of importance to make the distinction before one decides to incise.

The treatment of carbuncles as advised by most authorities, except Prof. Bier, seems to controvert one of the principles in the treatment of localized septic areas, that is crucial incision, extending beyond the limits of the inflammatory induration through the projecting wall into the surrounding lymph spaces which would seem to endanger further extension, but very good results are reported from this form of treatment. The incision is followed by the usual arrangement of free drainage and antiseptic dressings. Those who follow Bier minimize the incision and make use of the hyperemia band or suction cup of Klapp. If the latter is used it should have a diameter considerably larger than the carbuncle so as not to further traumatize the infected tissues.

The treatment of gas bacillus and anthrax infection I will barely touch upon as they are very rare in this locality. Authorities in general seem to agree that the proper treatment of gas bacillus infection as well as malignant edema, the two being difficult to differentiate, is free and multiple incisions, the abundant use of hydrogen peroxid and gauze moistened with the same to keep the tissue spaces from collapsing; if there be no improvement in twelve hours, amputate wall proximal to the infected tissues, leaving the stump open, not suturing the flaps. Where anthrax infection is diagnosed the administering of Sclavo's serum is said to be distinctly beneficial, with of course the extirpation of the pustule, and actual cautery or pure carbolic and alcohol followed by warm moist antiseptic dressings.

TETANUS.

Tetanus is to be treated chiefly prophylactically by the injection of minimizing doses of antitetanic serum at the time of injury and by the rigid antiseptic treatment of the wound which should be freely exposed; if of the punctured variety, mopped out with tincture of iodin and properly drained.

A means of local treatment of suppurative areas, that I think has been published by Ravogli of Cincinnati, is the use of light packing of gauze saturated with one half per cent. solution of formalin for twelve hours to sterilize the cavity. I have made use of the Murphy two per cent. formalin in glycerin in early cases before necrosis had occurred; small incisions seemed preferable to large ones, with eminently satisfactory results.

SYSTEMIC TREATMENT.

Various drugs, quinin, urotropin and whisky, have been used for years to combat the systemic effect of infection, and still there is neither positive evidence that they are of real value nor any explanation of how they act.

Large amounts of fluids may be introduced into the system by mouth, proctoclysis, or hypodermoclysis. I do not use salt solution except when in severe cases it is necessary to use it under the skin, and then only in emergencies and not over 500 cubic centimeters at a time, as I believe it is better to use plain tap water or glucose, one ounce to the pint of water, when administering fluids continuously by rectum.

It of course goes without saying that we should try to nourish the patients as well as possible. Attend to their comfort, see that they get the proper amount of fresh air, bathing and sleep. In other words, we should see to the medical and hygienic side of the case as well as the surgical side, especially in those cases of lessened resistance such as the diabetic, alcoholic and nephritic.

The average age of the patients in fatal cases of infection as given by Kanavel is forty-five years, and such cases as are found in the wards of large municipal hospitals are, as a rule, more severe and more often fatal than those found in small hospitals or in private practice.

A MEDICAL MAN'S WORK IN THE FIELD OF SAFETY.

BY CHARLES A. HAINES, M.D.,
Sayre.

(Read at the fifteenth annual meeting of L. V. R. R. Surgeons, Buffalo, N. Y., August 28, 1915.)

What useful things can a medical man do in the field of safety first, as applied to the operation of railroads?

The safety condition of machines and the mechanical devices of a railroad system are exclusively under the supervision, care and control of the officials, foremen, inspectors and employees of the company. In recent years their neglect has prompted in both state and national law-making bodies a rather crude kind of hitting-in-the-dark attempt at regulation. These attempts at legislation are going to increase in the future, unless by some means the large percentage of accidents and injuries can be otherwise reduced. Government statistics show that there are about 35,000 persons killed, 2,000,000 injured, of whom about 300,000 are permanently injured, by accidents in the various industrial operations each year. The economic waste brought about by these accidents can not be known, but we do see all around us, on every hand, great suffering, privation and destitution caused by the injuries. I believe that in more than ninety per cent. of these cases the machine is less at fault than the man.

With these mechanical devices the medical man has nothing to do. He deals with the men who operate, inspect, manage and provide the machines. His function is the most difficult and the most important. He has to do with the qualifications of the men, and should be called in to coöperate with the officials in an advisory capacity. An intelligent and careful man may operate a very dangerous machine with safety. Powder mills, nitroglycerin and pyrotechnic factories are operated safely by skillful and careful men. An operative, who does not know the dangers of the thing he is handling, or handles it in a negligent manner, not only endangers himself but others too. Therefore, men should be classified by railroad companies just as they are by the life insurance companies, and should be selected for responsible positions with careful supervision as to their fitness for the particular positions they are to fill, in much the same way that the life insurance companies would and do grade them. This brings to mind the first point I wish to make.

First. What can the medical man do to eliminate accidents? All will agree that the doctor's function in human affairs is an important one. Who, as he does, comes in such close touch with all human activities? He is with us first at our birth; he is at our side day or night as we journey through life in every accident, trouble or sorrow; and he is with us, holds us by the hand as the eye grows dim, and feels the last heart beat in old age and death. The doctor receives from us our closest confidences. He knows us better physically and mentally than any one else on earth. In short he can almost read the very working of our thoughts. Who, then, is better qualified, than he, to know what is the physical and mental condition of a man.

Every employee, who assumes the duties of a responsible position of a railroad, should be required, at the company's expense, to undergo a thorough medical examination. These examinations should be repeated at stated times and oftener as the necessities of the case may arise. The medical examiner should be an employee of the company, and thus be holden to no one else. He should together with his records be constantly called into consultation by every large employer of the company's forces. It should be his duty to know and keep a record of the physical and mental fitness of every employee slated for employment or promotion to responsible position. A man employed as foreman or inspector of machinery should be a keen observer. A man employed in a position requiring great strength, should not be a sufferer with hernia or other ailment that would tend to diminish his strength. And so for every occupation men should be classified according to their special fitness to perform well their respective duties. The medical man is by far the most competent authority to furnish advice in these respects.

The human body represents the highest type of organized machinery and must have periods of rest for recuperation of lost energy and vitality, and unless this is accomplished, certain parts of this organism must suffer. In the wear on the organs, functions are impaired and the way paved for disease. Disease changes the efficiency of the machine. The state health department has recognized this situation in school children and has provided by law for regular examinations, independent of the family physician's work. By systematic examinations, advice and treatment, there are many defects that can be remedied and the employees brought to normal condition. Otherwise, they may become entirely disqualified for the responsibilities incident to their employment.

In this brief paper, there is no room even to mention all the troubles that should disqualify men for responsible positions, but a brief mention of a few of them would make the point I raise self-apparent. First and foremost as the cause of sudden death may be mentioned diseases of the cardiovascular system. Physicians, who are equipped with modern appliances for accurate diagnosis, in many cases easily discover abnormalities affecting the circulatory system. Recent research has developed that in many cases the trouble was not with the heart, as was formerly supposed, but in the arteries and veins; hypertrophied heart, with dilatation accompanied with vascular insufficiency, as the result of a preëxisting condition of the blood vessels and abnormal conditions of the heart, is the result of overwork necessitated by the obstruction of the blood through the diseased arteries and veins.

Arteriosclerosis, now receiving a great deal of attention by the pathologist, is perhaps responsible for the large number of sudden deaths. Syphilis, the dread and scourge of modern civilization, is a factor in the cause of arterial degeneration. Another cause of arteriosclerosis is an overindulgence in eating and drinking. Drinking of distilled and fermented beverages in excess produces the same circulatory condition, but with a wider range of diseases, producing a greater task on the heart and circulatory organs.

Nephritis in advanced stages is always associated with other general or localized sclerosis of the blood vessels resulting in hypertrophy of the heart. It is not necessary to go into detail as to what the outcome of this disease may be, as we are fully aware from past experiences; and it is not necessary to say why such a man should not be entrusted with a responsible position. I would advocate excluding from employment in a responsible position all who are afflicted with the following disabilities, unless it be after a thorough course of treatment showing negative results, to wit: (1) Arteriosclerosis either general or local, (2) organic lesion, (3) persistent high blood pressure, (4) advanced stages of chronic nephritis, (5) symptoms of syphilis with coexisting diseases, (6) chronic alcoholics.

Second. The minimization of the effects of fraudulent suits for damages: The amounts necessarily paid out by the railroad companies in settlement of satisfaction of claims, presented or threatened to be presented in court, may be greatly diminished, as far as the company's own employees are concerned, by having full advance knowledge of previously existing injuries, defects and deformities. I think I am safe in asserting that nearly fifty per cent. of the actions brought against railroad companies to recover damages for alleged injuries are largely based on fraud. Such action, if the fraud could be shown up at the opportune moment, would be sure either to disgust the average jury or throw the case out of court by judicial instruction. To illustrate: A case was settled out of court, with a claimant whose injuries were alleged to have been received by a bale of hay falling and striking him, when the car he was loading was struck by a shift engine. The claimant's real injury and the one for which he was paid, was received some ten years before he became an employee of the company and while he was working in a sawmill. Claimant had the halt in his walk, the real cause of which might have been known in advance by a competent examination at the time he entered the employ of the company. A woman recovered in court substantial damages for defective hearing, alleged to have been sustained in an accident in getting out of a car. If the truth had been known, she was deaf more than ten years before the accident in question happened.

Third. The multiplicity of claims on the relief: The medical man might be of great assistance, where the claim presented is one against the relief association. An employee, before being accepted into membership in the relief, should be required to state in his application the amount and in what companies he is already insured against accident. With the relief member, who carries insurance enough so that he has a better income while off than while at work, is constantly under the temptation to magnify his injuries and lose much time when work is on short time or during the fishing or hunting season.

GALLSTONES WITH REPORT OF A CASE.

BY ARTHUR LLOYD PARKS, M.D.,
Rome.

(Read before the Bradford County Medical Society, December 3, 1914.)

Cholecystitis and cholelithiasis have been the subjects of almost a countless number of papers, resulting in a literature of enormous amount, a fact which at first thought causes one to wonder whether or not it would be an impropriety to add more.

Were the literature well filled it would not seem permissible; however, the ordinarily intelligent diagnostician, the man who is searching for the real facts, the one who cares to make a definite diagnosis of gall-bladder affections in their incipiency, turns from the literature in disgust. And why? Because a larger part of it "dead wood," and if read for more than passing interest should be forgotten, as it only serves to befog and mislead. (Permit me to say that I do not mean to discredit or in any way belittle the many excellent articles that have been written in the past upon this subject.)

One may read from a score of different textbooks, written from ten to fifteen years ago, of gallstones and this in part is the average symptomatology: "The diagnosis of gallstones is usually easy. In a majority of cases gallstones cause no symptoms. The gall bladder will tolerate the presence of large numbers for an indefinite period of time without symptoms. Usually jaundice, severe pain over the hepatic area, temperature ranging from 103° to 104°, pain in the right scapular region, colic, vomiting, putty-colored stools, etc."

Granted that these symptoms all occur at times, we must not deceive ourselves with such a symptomatology alone. The criticism is: First, to the teaching that, "the majority of gallstones cause no symptoms"; this may be true in part but is largely an admission of inability to recognize incipient symptoms and with absolutely no regard for terminal events as a sequence of gall-bladder affections. Dr. Charles N. Smith[1] of Toledo says that eighty per cent. of the cases of chronic pancreatitis is due to gallstones. Dr. Donald Guthrie[2] of Sayre, says: "The 'harmless gallstone' found at post mortem, causing no symptoms, has been the thing that has led many medical men to believe that gallstones can exist without giving symptoms. It can be proved that most of these cases occurred in the large hospitals, in the lowest types of life, and the patients died of some terminal trouble like nephritis or cardiac disease, and that they did not come for the gastric symptoms which the gallstones must have given them."

Therefore, let us get away from the quiescent gallstone idea and direct our effort toward a careful diagnosis of incipient symptoms and to differential diagnosis.

Again, too much stress should not be laid upon temperature, many patients having little if any above normal during the course of repeated attacks. The putty-colored stools, jaundice and colic are late symptoms and may not be manifest at all. I have records of nine cases occurring in the past five years in which there was no complaint whatever of pain over the liver.

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[1] Charles N. Smith: *Medical Record*, Oct., 1909.

[2] Guthrie: "Diagnosis and Surgical Treatment of Gall-bladder Diseases," PENN. MED. JOUR., Sept., 1910.

It is not the purpose of this paper to find fault or to knock, but it is a desire of the writer to emphasize the importance of establishing an early diagnosis in gall-bladder cases, to urge early surgical interference and not to be misguided by "ancient literature" and textbooks. Since the scope of this paper will not permit a lengthy discussion of these topics let us summarize as follows: Digestive disturbances are undoubtedly the cause of most failures to recognize early gall-bladder manifestations. And at this point I wish to quote rather at length from Dr. Guthrie's paper[3] written in 1910:—

> "Four stages of gall-bladder disease are distinguished, based upon the peculiar types of digestive disturbances:—
>
> "First. Cases of mild gastric disturbance, distress with gas, upward pressure coming on soon after taking food or at irregular times, of sudden onset, eased by belching or slight vomiting and passing away almost unnoticed and without treatment, although many remedies receive the credit for what is a natural return to health. These sudden mild attacks of dyspepsia are considered by Graham to be quite as typical of gall-bladder disturbance as are the severe typical attacks which usually supplant the mild ones.
>
> "Second. The second stage of the disease is seen in those cases with more or less prolonged dull pain in the epigastrium, right arch, or whole liver area. This pain is increased by food, exertion and motion. In some cases deep respiration gives pain, and when located posteriorly is often called pleurisy. During the attack the dyspeptic symptoms are likely to be present, and often a gastric lesion is diagnosed.
>
> "Third. In the third class we have the cases in which the diagnosis is most often correctly made, the typical gallstone attacks; sudden, severe epigastric pain radiating to right arch (at times to left), through to the back or to the scapular region, upward pressure, spasm of the diaphragm with nausea and vomiting, with sudden return to perfect health. These sudden, severe attacks with sudden cessation are peculiar to gallstone disease when no complications are present, and, while usually bearing no relation to food, are often called acute indigestion, acute gastritis, gastralgia, neuralgia of the stomach, and other foreign names.
>
> "Fourth. In the fourth condition, we have chronic bladder disease with adhesions, perforations, contractions, duct obstructions with infection, and pancreatitis. Here chronic gastric disturbances often predominate and the picture is closely related to chronic ulcer with complications. The key to the diagnosis usually depends upon the development of the early history."
>
> "Gall-bladder disease is more common in women than in men. In seventy-five per cent. of our cases the patients were women, and the condition was peculiarly common to women who have borne children; ninety per cent. of these women had had children. It is interesting here to note that many of the attacks occur soon after labor or in the puerperium. Many of the patients gave a history of having had typhoid fever."

The general practitioner, who sees practically all the early gall-bladder cases, must learn to make an early surgical diagnosis. (And right here I want to say, that the general practitioner does not read enough surgical literature.) Then it is his duty to impress the patient with the importance of an early operation, since there is absolutely no successful medical treatment (with respect to those who disagree).

Through the lay press we are doing much to educate the public relative to the importance of seeking early medical advice upon their knowledge of symptoms, which they may consider simple, but which may prove an oncoming malignancy. Then how can we, as true medical advisers, look upon these small beginnings, the slight incipient symptoms, lightly?

In conclusion permit me to report a gallstone case seen recently by Dr. Guthrie and myself:—

Mrs. R., aged sixty-six, widow, multipara, weighed about 200 pounds which was permanent for a long time. She had been constipated for years, and had had typhoid when a young woman. For the past ten years she would be sick for several days, though rarely confined to bed, and has been worse for the past five years. At these times there would be general lassitude, weighty disagreeable feeling over entire abdomen sometimes amounting to slight pain, anorexia, headache, tongue coated and dry. About the second day of these attacks, sometimes at the end of ten to twelve hours, she would begin to belch gas and vomit easily. As soon as a dose of oil or salts would stay down and operate she would feel better and rest. Neither was a physician called during the attacks nor was subsequent consultation sought.

Early in June, 1914, one of us (Parks) was called to see this patient. The history just repeated was obtained. The physical findings upon examination were: Lungs, mucous or moist râles; respiration, 24; temperature, 95.4°; blood pressure (systolic) 100 mm. The heart showed marked fatty degeneration with slight mitral murmur; the liver was within normal boundaries, not painful on pressure over its area, and showed slight tympanitic distention. Vomiting was frequent, and contained a small amount of bile and stercoraceous matter. There had been no bowel movement for two or three days previous; no jaundice was present.

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[3] Guthrie: *Albany Med. Annals,* April, 1910.

Diagnosis: There was bowel obstruction due to impacted enterolith, undoubtedly gallstone. An immediate operation was not thought advisable because of extreme prostration and the heart condition. The stomach was washed thoroughly daily with cessation of emesis; the lower bowel was washed as thoroughly as possible and the Murphy drip started. External heat was applied, ice chips were given for thirst, and attention was given to the heart. After three days the patient was much improved, her temperature was up to 97.5°; respiration, 16; blood pressure, 110 (systolic); there were slight pain and soreness over the abdomen. The patient was able to move about in bed. Her condition was encouraging though serious.

At this time Dr. Guthrie was called and an operation was done at once. Immediately a portion of collapsed gut was encountered which was followed upward until an object causing complete obstruction was found. There was much distention of the stomach and of the small bowel about the obstruction, but everywhere below it the gut was collapsed and ribbon-like. A gallstone of rather extraordinary size was removed, its location, as nearly as we could tell, being about midway between the pylorus and the ileocecal valve, marked distention and condition of the patient preventing an exact determination. The operation was completed in twenty minutes, the patient recovering nicely. She died subsequently from results of a fatty heart.

Figure 1 shows the stone which is two and one half inches long (end of rule not being quite even with end of stone and end of stone slightly broken). Figure 2 is an end view of the same stone, one and one fourth inches wide. The weight is exactly five hundred and three grains. It would seem hardly possible that the most extremely dilated ducts could accommodate the passage of so large an object. Hence the probability of its entrance into the bowel by ulcerating through the ducts into the duodenum, or from the gall bladder into the duodenum or into the small bowel. Had it remained long in the common duct we would have expected jaundice while there was none; its exact avenue of escape we do not know.

Had an operation not been made, certainly this patient would have died, and no consideration would have been given to "quiescent" "orderly" gallstones as the cause of death. It must also be remembered that the mortality in this type of cases is extremely high. In Weising's report of fifty-one cases thirty-eight of the patients died.

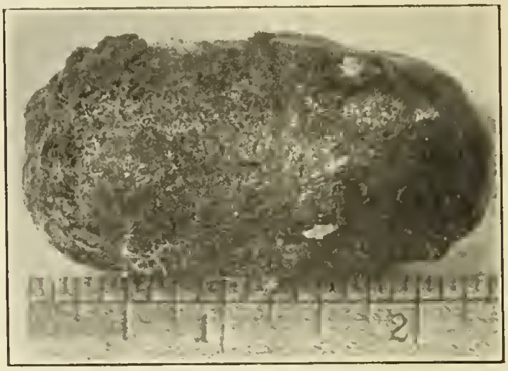


Figure 1.

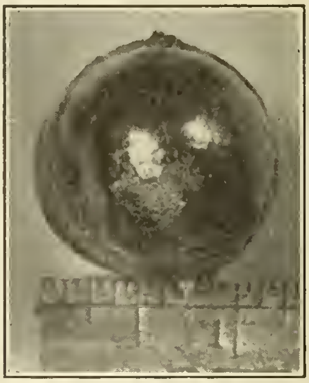


Figure 2.

Then, when one considers the history of the case, the slight pain, absence of jaundice, no tenderness over the hepatic area, without previous attacks of severe biliary colic, and when one thinks of this enormous calculus finding its way into the bowel with a previous history so devoid of positive symptoms, these facts should emphasize the importance of giving serious thought and consideration to the incipient symptomatology of these cases.

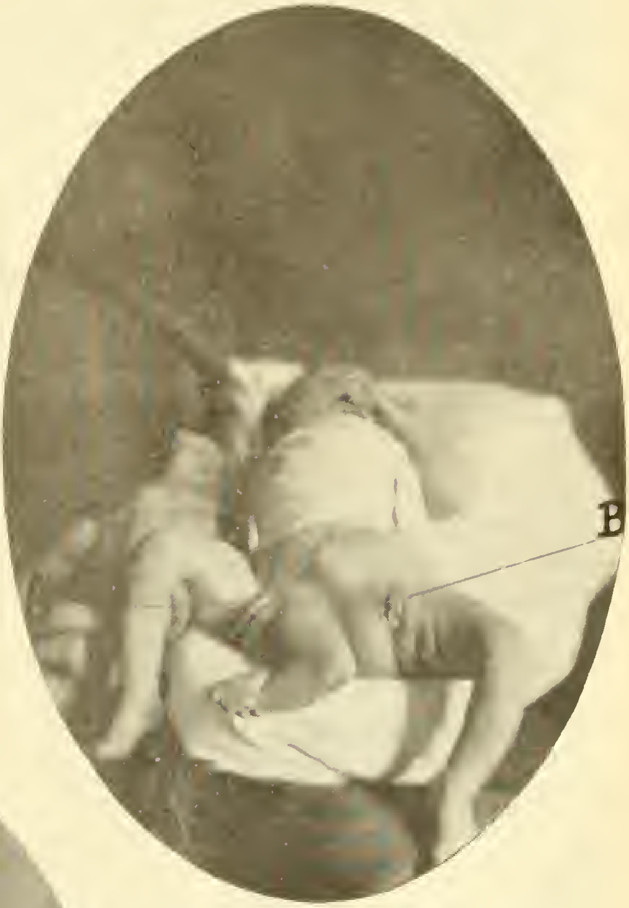
A DIAGNOSTIC POINT IN APPENDICITIS.

Horn (*Berl. klin. Wochenschr.*, 1914, No. 52). In the presence of an inflamed appendix, traction upon the right spermatic cord will elicit pain in the cecal region. If the inflammation is severe, the pain may also follow a pull on the left cord. The sign is said to be uniformly present early in the disease.

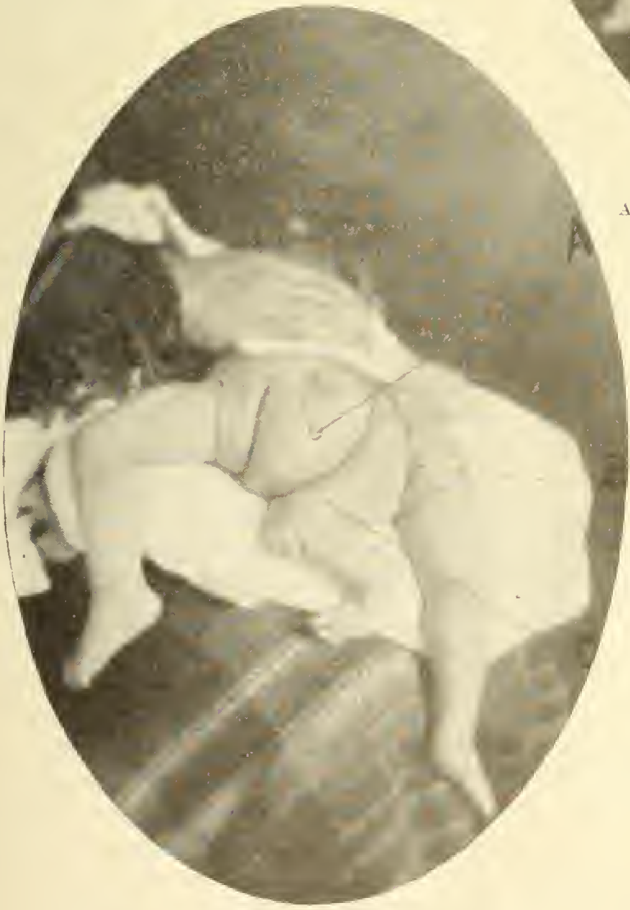
REPORT OF A CASE OF SPINA BIFIDA.

BY O. H. ROCKWELL, M.D.,
Monroeton.

On April 10, 1904, I was called to attend Mrs. H. C., a primipara, in confinement. After a somewhat prolonged and difficult labor she gave birth to a female child deformed as follows: The child's body was normal above the pelvis; the pelvis, however, was double, with three legs, the middle and smallest leg being somewhat deformed. There was a single opening behind, anal, in the right pelvis; there were two openings in front, one in each pelvis, the one in the right pelvis being a vaginal opening, with urethra communicating with the bladder, which was single; the other opening in the left pelvis, at first taken for the second vaginal opening, proved to be a second anal opening, although without sphincter muscle. There were fecal discharges from both openings, not always simultaneous, but continuing during her life.



Anterior view: A, Normal vaginal opening. B, Anterior anal opening.



Posterior view: A, Spina bifida. B, Anal opening. C, Middle leg.

Between the middle and left leg at lower end of sacrum there was a large fluctuating tumor, spina bifida, covered with integument, tense and almost transparent. It was thought from the size of the tumor, which was fully as large as the baby's head, that she would live only a short time. She, however, lived and grew, though never very strong, and never walking, but mentally a very bright and attractive child, until in March, 1914, after a few days of extreme suffering, due to pressure, the tumor ruptured, discharging large quantities of bloody serum; death followed in about seventy-two hours after the rupture. Age at death was nine years and eleven months. I have learned of no case where the patient lived beyond eleven years.

THE FUNCTIONS OF A HEALTH BUREAU.

BY CHARLES P. HENRY, M.D.,
City Health Physician, Reading.

(Read before the Berks County Medical Society, October 13, 1914.)

Health is that condition of the body in which all the various functions are performed normally. Disease, on the other hand, exists where there is impairment of some function. Civilization has produced a number of habits in man, some promoting health, others disease. The denser the population the greater the opportunity for dissemination of disease; hence, as men increasingly congregate in towns and cities, the need for sanitary law increases.

This is an age of conservation. A life is now regarded as a commercial asset, and it must yield so much on the investment. Every death is a direct monetary loss to the community, some authorities estimating it at $5000; hence, last year from typhoid fever alone with a death rate of fifty, this community lost $250,000. Typhoid fever is now recognized as a preventable disease. We all know the direct cause, and we know how it is carried. Then why did the city of Reading lose $250,000 last year?

It is absolutely essential that the citizens of the municipality be educated to a proper appreciation of what sanitary nuisances mean. We can go by force only a little way in advance of public opinion.

Diseases are of two kinds, acute and chronic. The acute diseases are transmitted by germs. There is no infections disease which is not preventable by isolation, destruction of carriers, vaccination, disinfectants, street cleaning and school inspection.

Chronic diseases, however, as of stomach, kidney, liver and heart, are caused by overeating, alcohol, tobacco, drugs, loss of sleep and recreation, and their own prevention is by public education. The acute diseases are on the decrease. The chronic diseases, on the other hand, are on the increase.

Flies are among the greatest existing disseminators of disease, each fly carrying about six thousand germs on its legs. Furthermore, the typhoid germ can go through the intestinal tract of the fly unharmed. Flies seldom travel more than five hundred yards from their breeding places. These pests play an important part in the scattering of typhoid fever, the summer complaint of infants and tuberculosis. Hence the breeding places of the fly must be destroyed.

In regard to our own city, where are these breeding places? In the first place, we have about fifteen thousand outhouses, many of which are full and leaking, the boards at the back being broken, the doors seldom closed. These furnish very fertile breeding places for flies. The point I am making is this: Typhoid fever has been rampant in this city for years and, since an average of four out of every one hundred typhoid patients are chronic carriers, these outhouses must contain a large number of typhoid germs which the flies are carrying into my house and into your house. It is a thought which shocks the laity, but is nevertheless true, that flies make innumerable trips from a privy in your own or your neighbor's yard to your bread and butter plate in the kitchen and dining room.

The second breeding place for flies is the manure pile, many of which are scattered throughout the city and, in many instances, in its most congested part. These manure pits are supposed to be air-tight and fly-proof and the manure is supposed to be carted away when the pits contain two two-horse loads or less. There are a number of pits in the city which do not come up to these specifications and are breeders of flies.

The third breeding place for flies is the unpaved alley. There is not an alley in the city except those paved from side to side which do not contain stagnant water. Even those alleys with cobblestone gutters are very unsatisfactory, the grass and weeds growing in between the stones and the mud and filth sediment stop the natural flow of water. These are very active breeding places for all insects.

This summer we have had eleven deaths from typhoid fever, and 219 deaths of infants under one year of age. How many of these deaths are due indirectly to the fly?

The Bureau of Health started a campaign last spring to root out these breeding places. One fly killed in the spring means the lessening of millions of flies in the summer; to be exact, one female fly is the progenitor of 14,067,792,000,000,000 flies in a season. We had a clean-up week and removed 104 two-horse loads of rubbish from yards, cellars and vacant lots. From the alleys we carted 769 loads of filth and rubbish.

We started after the manure piles and privy vaults and one man did practically nothing else. We have made nearly three thousand inspections since March. The number of sewer connections has increased materially, for many people have discovered that it is cheaper to connect to the sewer than to clean the cesspools so frequently.

These activities were aimed at the control of typhoid fever, and, although this has been a bad year for typhoid fever throughout the state, in this city, our cases number 223 as against 509 in 1913. There remain two and one half months during which typhoid is likely to continue.

We have encouraged the injection of antityphoid vaccine and have made it possible for the physicians to obtain it at the lowest price. The Health Bureau has coöperated with the Visiting Nurse Association in its various baby clinics in the different parts of the city and was instrumental in starting the Fresh Air Hospital at Antietam Lake.

The Health Bureau has only begun and there is still an incalculable amount of work to be done. Although this year about $10,000 have been expended on alley paving, there is enough to be done to keep us busy for several years.

There should be better work done in the prevention of so many premature births, perhaps by having clinics established where mothers can receive instructions concerning prenatal care.

Some plan should be formulated whereby the venereal diseases could be controlled, Wassermann reactions performed and the proper treatment given by the city to those who can not afford to pay for it. A municipal hospital should be built for scarlet fever and diphtheria and, while waiting for that, we should have a municipal nurse to visit the houses of those so afflicted, instruct their families in regard to quarantine, making the proper antiseptic solutions, bathing the patient, etc.

The milk delivery in this city is not so good as it could be. Milk was never meant to be transported from one place to the other and as soon as this is done an artificial condition is created. We are all agreed that the worst form of delivery is dipping the milk. While the top of the can is off, the dust of the street drops in, the milkman's hands are dirty from driving, etc., and there is every chance for pollution. The ideal way is pasteurization of milk in the final container, but this is impossible until there is a municipal pasteurization plant. Until we achieve that point, we are insisting on improved milk houses, covered cans for milking, quick cooling of milk and, when possible, the proper bottling of milk and the use of the Fetherolf can. There have been about two hundred law suits concerning the milk situation in this city and now the producer and the seller are fairly coöperative.

The hotels, bakeshops, restaurants, soda fountains, ice cream stands and barber shops should be under strict supervision. The employees who handle our foods should have a physician's certificate to show that they are not suffering from contagious disease, especially tuberculosis and syphilis. The housing conditions should be looked after, new building laws drafted and restrictions made in regard to the number of occupants allowed in a room, the size of the rooms, drainage, toilet facilities, etc.

The state claims control of all vital statistics and appoints a registrar in each locality to take care of them. He is paid according to the number of death and birth records received. These records are getting more important every day. It is unnecessary for me to go into detail about the value of a birth certificate to an individual, but the point I would bring to your attention is that a local bureau in the State of Pennsylvania is not allowed to give out any data but must refer inquiries to Harrisburg. I contend that a city's records belong to itself first of all.

Concerning the control of contagious diseases: I think the employment of a nurse such as I have mentioned would be a big help. Also, I think that some of our quarantine laws are too severe. The law states that a child ill of scarlet fever must be quarantined for thirty days and must stay out of school for thirty days longer. Some cases of scarlet fever are well in fourteen days and others are not well for forty days. Yet the law states specifically thirty days, and that child can not go to school for thirty days after quarantine but it plays with its little friends in the street and goes to the moving-picture shows. I think where there is an efficient health bureau, the law should allow the family physician to notify the health officer when he considers it safe to lift the quarantine and the health officer should visit and examine the child. Then, if he considers the disease ended, the quarantine should be lifted no matter if it has been fifteen days or forty-five. I have mentioned only scarlet fever, but the same principle applies to measles, mumps, chicken pox and diphtheria.

We have now established a laboratory, not so complete as we would like it, but it is a beginning and it will surely grow. We hope it will be a great aid in preventing epidemics and a convenience to the physicians and thus indirectly to the patients.

The medical inspection of scholars helps the Health Bureau wonderfully in the control of transmissible diseases. Our only regret is that the pay is so small that the school inspectors can not give more time to the work. To obtain the best results every school should be visited each morning, but this is not possible nor practicable at this time.

The family physicians can aid the community by carefully instructing the parents about the dangers of transmitting diseases and how to prevent their transmission. Make it a personal matter with each one. Impress upon them how important quarantine is and how their carelessness may be the cause of some child's death. The public will take the advice of a family physician more kindly than they will that of the Bureau of Health, which most of them dislike, for its work is largely coercive.

Finally, we are coming to the day when the aim of the medical profession will be *prevention*. These minor diseases will be stamped out. The Bureau of Health is the friend of the physician and no efficient practitioner need fear that it is trying to put him out of business. There will always be sickness and plenty of work for the doctor, and the Health Bureau will always be at the service of the medical profession of Reading.

THE OCULAR SYMPTOMS OF THE PARASYPHILITIC AFFECTIONS, PARESIS AND TABES.

BY C. W. LE FEVER, M.D.,
Philadelphia.

Although paresis is chiefly a disease of the brain, and tabes is chiefly a disease of the cord, both are usually the late results of acquired syphilis, and, in the early stages, they present much in common in the way of symptoms. This is especially true of the eye symptoms. Indeed, there is no single eye symptom of either which may not be met with in the other. It is, therefore, chiefly by means of the greater frequency of certain symptoms and the syndrome constituted by the association of certain ocular phenomena in each of these affections that the ophthalmologist is able to render valuable assistance to the rhinologist in solving the problems of diagnosis presented by them. It is the purpose of this paper to call attention to these points of frequency and association of eye symptoms in these two conditions.

Before beginning a comparative study, it seems well to say something of the general significance and the methods of elicitation of certain ocular phenomena, for without a reasonable standardization of methods of observation, individual reports, as well as statistics, have little value. This fact doubtless accounts for the wide difference of opinion held by different observers as to the frequency of certain symptoms.

Size of the Pupil. The light in which the patient is examined should approach as nearly as possible to that of an ordinary window on a clear day, but without direct sunlight. This can not be regularly obtained from a window on cloudy days or late in the afternoon. A substitute which is of constant value is therefore preferable; such a light may be obtained from a gasjet or lamp of forty candle power, thirty inches in front of a patient and just over the observer's head, with the patient fixing his eyes on the observer's face. In this light, the average pupil is about three and one half millimeters. A trained observer will not require a pupillometer to determine normal pupils, but wide variations should be measured. In children under two years of age and in individuals past fifty years, the pupil is smaller; in young adults, especially girls, it is somewhat larger. It is smaller in hyperopes and larger in low myopes, and is also subject to considerable variation according to the index of the patient's sympathetic nervous system. These normal variations may amount to a millimeter, or more, and must be remembered in any study of the pathologic pupils.

Inequality of the Pupils. This is of much more frequent occurrence in normal eyes than is generally recognized. Not less than fifteen per cent., and probably more, of normal patients present inequality of the pupils. To make this observation, the light should be screened, so that only enough light falls on the eyes to permit the pupils to be well seen. The pupils will then dilate, and the inequality will become manifest. If the pupils do not respond equally to light, they will become unequal when the screen is removed.

Reaction to Light. This response may be considered normal if the pupils, tested separately, contract to two or two and one half millimeters when the standard artificial light is condensed on them with a condensing lens. Or the light may be turned off and on in a darkened room with the same response. Hand-covering is not a satisfactory method.

Reaction to Accommodation and Convergence. This test is made by having the patient fix a pencil point at about half a meter, then approaching the midline of the face until the convergence angle breaks. The normal response is about the same as to light.

Visual Acuity. This is a simple test, but often poorly made. Using the method of Snellen, the patient must be encouraged to follow down the card as far as possible; otherwise he will often cease reading when the letters begin to blur, but while he is yet one or two lines above the best possible. This test is of no value to the neurologist, except when the patient's glasses, giving the best vision possible, are worn. The old glasses presented by the patient, are often incorrect, and patients are thought to have lowered visual acuity when only the proper correction is necessary to give them normal vision.

Field of Vision. Testing the field of vision is most difficult, and should be attempted only by a trained ophthalmologist who is a close observer. The patient's psychologic status must be controlled, or the chart will be of little value. Especially is this true of the color fields, and fields containing scotomata. Only the roughest idea can be obtained of the form field by hand testing without a perimeter.

THE COMPARATIVE OCULAR SYMPTOMS OF PARESIS AND TABES.

1. *Lowered Visual Acuity.* Blindness is not a common symptom of either tabes or paresis, but it occurs more frequently in the former than it does in the latter. On the other hand, some loss of visual acuity is claimed by Dercum to be a not unusual symptom in paresis, and should be tested for in all cases. It is not accompanied by optic atrophy which is manifest, whereas in tabes the optic atrophy is the cause of the lowered vision, and the nerve is always white when vision is poor. The lesion is central in paresis, and peripheral in tabes. Any error of refraction must be eliminated in making this test.

2. *Optic Atrophy.* Optic atrophy is of common occurrence in tabes, and is rare in paresis. In both diseases, it is apt to begin in the first stage, if at all. In tabes, it is ascending; that is, the disc is usually whiter than normal from the beginning of the atrophy, and the whiteness precedes, or is out of proportion to, the loss of visual acuity. Indeed, the atrophy must be diagnosed by the pallor of the disc, for there is neither lowered vision nor contracted fields until later. On the other hand, if optic atrophy occurs in paresis, it must usually be diagnosed by the lowered visual acuity and contracted or distorted fields, for there is seldom any pallor. In other words, the atrophy of tabes is ascending, and the atrophy of paresis is descending. If pallor appears at all in paresis, it is usually late, and the diagnosis of atrophy is therefore in doubt in the early stages. It is apt to appear as a segment atrophy rather than a general pallor, as in

tabes. Atrophy occurs in about twelve per cent. of tabetics, but is much less frequently seen in paretics. An optic atrophy of unknown origin is suggestive of tabes.

3. *Field of Vision.* In tabes, when the fields are abnormal, they usually follow a certain type of change, that of concentric contraction for both form and color. This type of field is generally found where atrophy is well marked from any cause, and it is seldom seen in the absence of atrophy. In paresis, the fields are seldom affected, and there is no specific type of defect which is characteristic. There may be concentric contraction, or hemianopsia, or color-blindness (partial or complete), but any of these is rare.

4. *Involvement of the Extraocular Muscles.* The symptoms resulting from disturbances of the external ocular muscles are diplopia, ptosis, strabismus, limitation of movement, and nystagmus. Any of these may appear in either paresis or tabes, but diplopia and ptosis are the most common. They are much more frequent in tabes than they are in paresis. Not less than twenty-five per cent. of all tabetics present such symptoms. Diplopia is most often found, with ptosis second. These occur in the preataxic stage, chiefly, and are often transient. They are probably due to peripheral lesions and very rarely amount to paralysis with strabismus. Single muscles are most often involved. They are generally associated with the Argyll-Robertson pupils. Occasionally, there is no recovery from the diplopia, and it becomes a very troublesome featnre of the disease. Again, recovery from diplopia is apt to occur, and mislead the patient into the belief that he is improving. The physician must know their true significance. Nystagmus, strabismus and loss of motility are rare in tabes. In paresis, these muscle symptoms are much less common and are of nuclear origin. They are less apt to be transient, and they do not, as a rule, occur in the early stages of the disease. Neither is the involvement apt to be limited to a single muscle.

5. *Paresis of Accommodation.* Weakness or loss of accommodation is rare in tabes, but is said to be common in paresis, although it is a difficult symptom to determine exactly. It is one of the least common eye symptoms in tabes, and one of the most common in paresis, occurring usually in the late stages. Since these patients are mostly presbyopes, this symptom is quantitative, and the test is a delicate one to make in such a way as to have any value. The patient's error of refraction must be known, and his correction worn while making the test. It is therefore necessary to examine the refraction in each case; the observer must also be familiar with the normal range of accommodation at any given age.

6. *Myosis.* Small pupils are common to both paresis and tabes. In paresis, they occur in about twenty per cent. of cases, and in tabes, they occur in thirty per cent. Myosis is an early symptom in each. In tabes, it is usually associated with loss of light reaction, and is bilateral and very marked, while in paresis, it is apt to be unilateral, or unequal, and moderate. Pin-point pupils always suggest tabes.

7. *Mydriasis.* Dilated pupils are not common in either disease, but are more frequently seen in paresis than in tabes. In each disease, the mydriasis may appear early or late, but it is more often late than early. In paresis, it is of nuclear origin, while in tabes it is peripheral, and it is apt to be associated with a diplopia or ptosis. In tabes, it may result from blindness. In paresis, blindness it so rare that it is a negligible factor.

8. *Impaired Light Reaction.* Sluggishness of the pupils to light is the most confusing ocular symptom in these two diseases. It is present in about sixty-five per cent. of paretics and in about seventy-five per cent. of tabetics. Its presence alone does not suggest either in preference to the other. The associated phenomena must therefore be remembered. In paresis, the reaction is usually unequal in the two eyes, the pupils are apt to be of unequal size, and myosis, if present, is not apt to be marked; while in tabes, loss of response to light is usually equal on both sides, pupils are apt to be of equal size, and the myosis is generally present and apt to be marked. Most important of all, the Argyll-Robertson association is present in tabes; the pupils respond to accommodation, but not to light. The loss of response to light is generally complete in tabes, but it is seldom complete in paresis, although it must be remembered that the loss in tabes is probably

gradual at first and may be incomplete in the early stage.

9. *Impaired Reaction to Accommodation.* Just as mydriasis is more common in paresis than it is in tabes, so loss of pupillary contraction to accommodation is much more common in paresis than it is in tabes. In the late stage of paresis, it is present in about fifty per cent. of cases, while in tabes it is a symptom not often met with, is usually associated with blindness, when present, and is therefore of indirect significance. A loss of response to accommodation suggests paresis rather than tabes.

10. *Inequality of the Pupils.* Pupillary inequality is characteristic of paresis. Its value in the diagnosis of paresis is almost equal to that of the Argyll-Robertson pupil in tabes. It is present in about seventy per cent. of cases, and carries out the general aspect of asymmetry between the two eyes. It is the most constant symptom of paresis, and should always suggest this disease, other things being equal. In tabes, inequality of the pupils is not common, but it does sometimes occur. It is most important not to forget that inequality of the pupils has no significance unless associated with other symptoms, on account of its frequent occurrence in normal eyes.

DIFFERENTIAL SUMMARY.

Symptom.	Paresis.	Tabes.
Poor vision	Not frequent or marked	More frequent and more marked
Optic atrophy	Rare	12% of cases
Visual fields	Not often involved. Irregular types	Concentric contraction accompanies atrophy
Ocular palsies	Rare and apt to be multiple	Common and single
Weakness of accommodation	Frequent	Rare
Myosis	20% unequal	30%, equal
Mydriasis	Frequent, late	Rare, early
Impaired light reaction	65%, partial and unequal	75%, complete and equal
Impaired reaction to accommodation	Frequent	Rare
Unequal pupils	Generally present	Not often present

A great advantage, too, of a skeptical attitude of mind is, as Green the historian remarks, "one is never very surprised or angry to find that one's opponents are in the right." It may keep him from self-deception and from falling into that medical slumber into which so many drop, deep as the theological slumber so lashed by Erasmus, in which a man may write letters, debauch himself, get drunk, and even make money—a slumber so deep at times that no torpedo-touch can waken him.—Osler.

THE RELIEF OF INDIGESTION BY SURGICAL TREATMENT.

BY SAMUEL MC CLARY, III., M.D.,
Surgeon to the American Oncologic Hospital, Assistant Professor of Surgery, Medico-Chirurgical College, Philadelphia.

Many patients with gastric symptoms are treated by drugs with unsatisfactory results. This is so when the gastric symptoms are not caused primarily by gastric disease, but are simply reflex symptoms caused by a pathological condition of some other organ. The patient getting no relief becomes dissatisfied and the physician feels that his efforts are in vain. Right here I wish to repeat a sentence which I believe was first uttered by William Mayo: "The stomach is the alarm clock of the abdomen." No man ever uttered a more practical opinion, for in ninety per cent. of the cases which present gastric symptoms the underlying condition is situated elsewhere.

Gastralgia, hyperchlorhydria, nervous dyspepsia and many other terms applied to chronic indigestion are only a part of the symptoms of some definite pathological lesion. It is up to the physician to elucidate the other symptoms by a careful physical examination, a detailed history, radiographic and clinical laboratory findings, including blood, urine, gastric contents and feces. We must find positively the definite cause of trouble before the patient can be relieved. This is sometimes by no means an easy matter; often one lesion is found that is secondary to another, and both must be corrected before the patient will get relief. For example, gastric and duodenal ulcers are sometimes due to septic thrombi transmitted from a diseased appendix. The experimental work of Payr showed that by injecting into the mesoappendix a solution of dermatol, there followed a thrombus in the gastric veins, which was subsequently the origin of a gastric ulcer. Cholecystitis and hepatitis are frequently secondary results of primary disease of the appendix, ileum, or colon. We find duodenal ulcer common in patients that have suffered extensive burns; the toxins, which are absorbed from the numerous bacteria infecting the burned area, are partly eliminated by the duodenum, and thrombi are developed in the blood vessels of the duodenum which later become ulcers.

We must not, in our plea for surgery to relieve gastric symptoms, forget that, in a small number of cases, the cause of the gastric condition may be due to some constitutional disease, such as renal, cardiac, hepatic disease, pulmonary tuberculosis and syphilis, also many diseases of the cerebrospinal system. These should be carefully eliminated before we look for the surgical causes of indigestion.

The most frequent cause of reflex indigestion is appendicitis, frequently associated with Lane's kink. In many cases there are no typical symptoms, the patient will deny any pain in the appendiceal region and there is no rigidity of the abdomen. Sometimes we may aid ourselves by inflating the colon with air and then elicit pain by pressure over the appendiceal region. In females a vaginal examination sometimes aids in the diagnosis. The *x*-ray is of much help in some cases, especially when the appendix is retrocecal. When we find a stagnation of the bismuth meal in the region of the caput coli, and often an appendix filled with bismuth which does not empty itself, we may feel sure that there is a pathological condition of the appendix. These vague cases of appendicitis frequently produce marked gastric symptoms, nausea, heartburn, fullness and distress after meals, and the patients are often treated for hyperacidity or pylorospasm, both of which may be present; but they are only reflex symptoms and the patient will get no permanent relief from drugs.

The next most frequent cause of reflex indigestion is gall-bladder disease and here *x*-rays will frequently help us find stones; also Murphy's test is useful in helping us to diagnose an inflammatory condition of this viscus. It is performed by placing the fingers of the half-closed left hand under the costal arch in the gall-bladder area; push them down deeply, tell the patient to take a long breath, which brings down the gall bladder with the descent of the liver. At the end of inspiration hit the back of the hand with the other closed fist and if there is an inflammatory condition present the patient will usually cry out from pain. We must also remember that gall-bladder trouble is frequently secondary to a diseased appendix and many surgeons are now inspecting the appendix at the time they attack the gall bladder. It would be wise, if possible, to determine the condition of the appendix previous to gall-bladder operations, as I believe it is better to remove the appendix through a separate incision, rather than to extend the gall-bladder incision down to the appendiceal region, making a long wound and thus increasing the possibility of hernia. The relation of appendicitis to gastric and duodenal ulcers must also be taken into consideration when operating on these conditions.

Other conditions that may produce marked gastric symptoms are pancreatitis, nephroptosis, nephrolithiasis, visceroptosis, gastric carcinoma, cecum mobile, abdominal adhesions and chronic intestinal stasis. I would like to take up the subject of chronic intestinal stasis which is a frequent cause of indigestion and, according to Mr. Lane, is responsible for many digestive and constitutional conditions, but a short treatment of this subject would prolong my paper beyond the usual time.

All the above-mentioned conditions should be diagnosed if the examinations previously suggested are carefully made and the case studied. The radiographs should be made by an expert radiographer and the clinical laboratory and physical examinations be made with extreme care, and repeated until a positive diagnosis can be made; after this the condition should be remedied by the proper surgical procedure. I do not mean to say that all cases of indigestion should be treated surgically, but I want to emphasize the fact that many cases of indigestion are treated with drugs for years without success, when they might be quickly cured by a surgical operation, and the patient will not get permanent relief until this is done.

CASE REPORTS.

Mr. W. S., February 5, 1912, had had indigestion for about five years; stomach contents after test meal showed hyperchlorhydria. He was treated by belladonna and alkalies with no relief until on March 10 I made a diagnosis of chronic appendicitis and the appendix was removed. Patient was well until November 4, 1914, when he had an attack which his physician thought to be acute indigestion; he had another similar attack on January 6, 1915, when I saw him and made a diagnosis of cholecystitis, which I believed to be the cause of his previous attack of acute indigestion; he became jaundiced in three days and I operated, draining the gall bladder. Recovery followed with no more symptoms of indigestion.

Mrs. L. R. K. was referred to me, April 20, 1914, suffering from chronic indigestion. I made a diagnosis of chronic appendicitis and probably gallstones. I operated on her June 1, 1914, removed a chronic inflamed appendix; through the incision I palpated the gall bladder, found it full of stones, made incision over gall bladder, removed 176 stones and drained. Patient made good recovery and when I saw her last March 23, 1915, she told me she was eating anything and had perfect digestion. This patient was treated for stomach trouble for eight years previous to coming under my care.

Mrs. M. L., referred to me by Dr. S., January 4, 1914, had pain very soon after eating. Gastric contents showed hyperchlorhydria. Suitable medication and diet did not bring relief. X-ray examination by Dr. N. showed a chronic appendicitis and reflex pylorospasm in a small stomach. Appendectomy will relieve the cause in this case and cure the patient. She had a history of indigestion for six years and no medication ever gave relief.

R. H. was referred to me May 3, 1914, suffering with indigestion of five years' duration; pain about two hours after eating which was relieved after belching up gas. X-ray examination by Dr. N. showed a normal condition in the appendiceal region and a clearly defined gastric ulcer near the pylorus. The day following he had a profuse gastric hemorrhage and was at once sent to the hospital and operated upon before the American Medical Association Clinic, June 28, 1914. A gastroenterostomy was performed as the patient was in such a weak condition that the more radical operation of excision of the ulcer was not considered advisable. I saw this patient a few days ago; he is in good condition and has gained twenty pounds. In this case the ulcer was not caused by a diseased appendix, but it was due to an ascending infection following typhoid fever.

WHAT WE NEED.

We need the kind of statesmanship and public charity that will keep our people out of hospitals and asylums and give to them the healthy minds and bodies that no economic laws, however faulty, can prevent from conquering the forces of poverty and misery. We need the kind of medical science that will keep steadily at the humdrum work of maintaining physical and mental efficiency among the people, eliminating the necessity for marvelous "cures" and "wizard-like" operations. All honor to the brilliant discoverers of cures and to the brave and skillful surgeons, but let us try to make their talents required and available in some other field. We need a combination in restraint of needless misery and premature death. The elements and forces are available. Let us hope that they may be assembled, coördinated, and directed to the end that we shall make some progress in smashing the villainous tradition that "man was made to mourn." —EUGENE LYMAN FISK, M.D.

A CASE OF CONTINUED FEVER OF UNDETERMINED NATURE; ITS CAUSE, TERMINATION AND PATHOLOGICAL FINDINGS.*

BY B. FRANKLIN STAHL, M.D.,
AND NORMAN B. GWYN, M.D.,
Philadelphia.

(Read before the Section on Medicine of the College of Physicians, Philadelphia, November 23, 1914.)

Case of E. C., white woman of fifty-eight years, complaining of pain in the lower left axilla, was admitted to the Philadelphia Hospital, September 10, 1914. For many years she had been a steady drinker. For about five weeks she had been feeling poorly, weak, and occasionally feverish, and in the last few days had had pain in the left axilla when a few crepitations were heard, and it was supposed that a slight involvement of the pleura was present.

Both the past history and the history of the recent illness were strikingly negative. In view of the autopsy findings we might state here that no gastrointestinal symptoms were complained of, no hemorrhoids were present, no history of hemorrhages from mucous membranes, nose, mouth, or intestinal tract, or of previous attacks of ascites could be elicited.

There was practically a complete absence of physical signs. The few crackles in the left axilla disappeared, but subsequently a few appeared at the right base; urine and feces told us nothing. There was a persistent leukopenia and lymphocytosis. Agglutination tests with typhoid and paratyphoids (A. and B.) gave no suggestion of infection by these organisms. Several blood cultures remained sterile, no malarial parasites could be found. Wassermann reactions were negative. Tuberculin tests were weakly positive; sputa were repeatedly negative for the tubercle bacilli. The patient ate and slept well, had a slight cough at times, and occasionally some vague intestinal pain. The stools were normal-looking, and contained no tubercle bacilli, blood or pus. No suggestion of malignant growth could be found in the rectum or the genitalia.

A gradual wasting without pronounced anemia took place.

It was considered possible that a hidden tubercular infection was the cause of the fever, but cirrhosis of the liver was definitely discussed in view of the history of alcoholism; at the end of five weeks the detection of distinct yellowing of the con-

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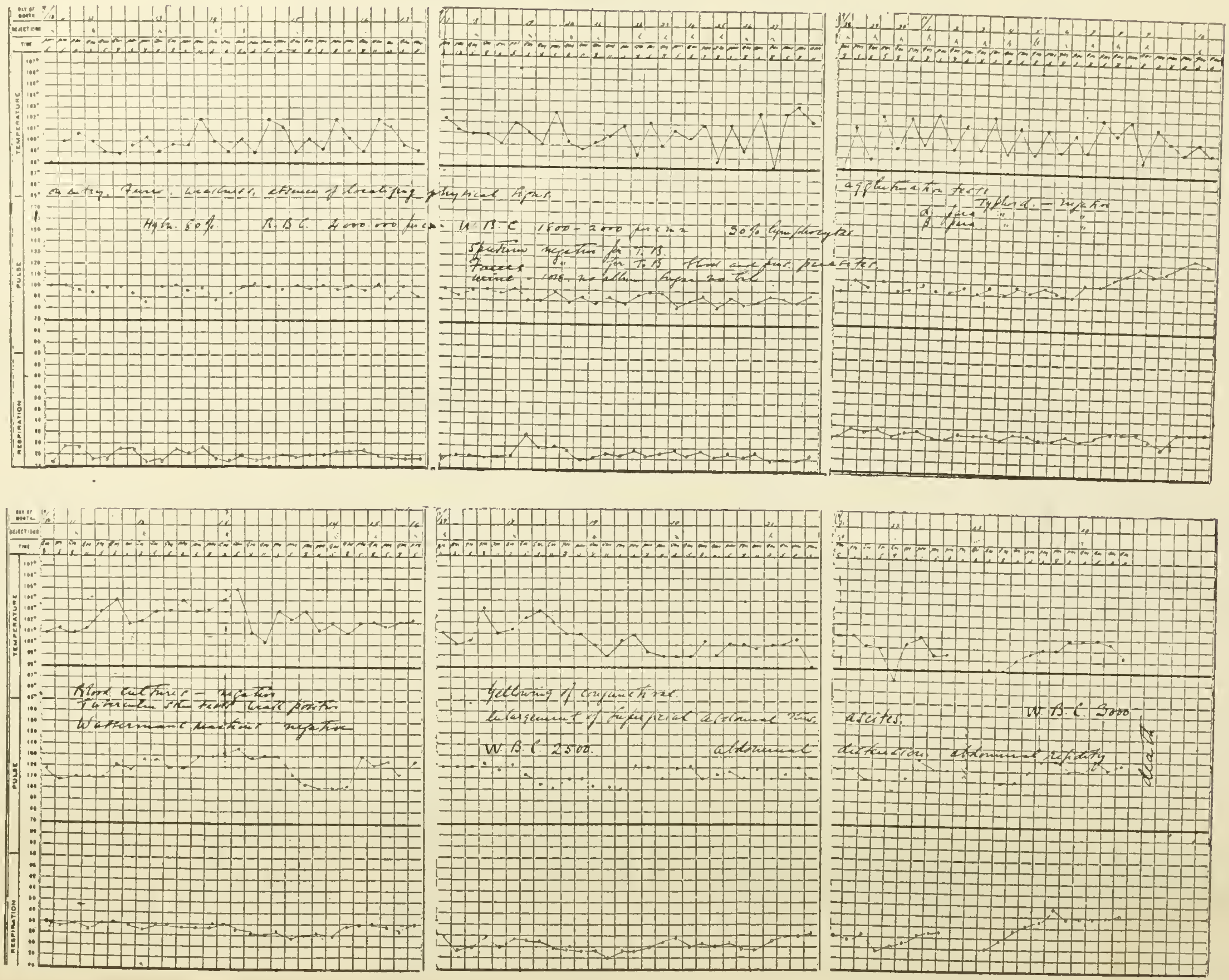
*From the service of Dr. B. F. Stahl, Philadelphia General Hospital.

TEMPERATURE AND CLINICAL RECORD.



junctivæ, and enlarged veins coursing up over the thorax and down to the groins made us consider it yet the more. The fever of a tertiary syphilitic condition seemed to be ruled out by the negative Wassermann reactions.

On October 15, 1914, the liver was noted as not being enlarged and could not be felt; spleen, not felt. The patient failed rapidly and was then only semiconscious. Three days later swelling of the abdomen began, first with tympany, then with distinct dullness in flanks; pain in the right side of the abdomen became a marked feature, but distention was never extreme. The patient continued to fail rapidly.

Four days later signs of fluid in the abdomen were distinct, and marked resistance of the muscles had developed; from the subacute signs it was considered probable that a tubercular peritonitis had developed or that possibly a mechanical peritonitis from a quickly disseminating new growth had occurred.

At no time in the last ten days of life did it seem likely that operative measures would prolong life. Vigorous antisyphilitic treatment was given. Patient died comatose on October 25, 1914.

The accompanying chart shows the five weeks' fever and details as they appeared. Various tests and physical signs are placed at about their time of being made in the one case or appearing in the other.

The autopsy on the date of death showed the following:—

The weight of the liver was 1150 grams; kidneys, each 150 grams; spleen, 500 grams. Atrophic cirrhosis of the liver, which in one part of the left lobe was deeply indented, suggested a syphilitic process. It was yellow-brown in color, coarsely nodular and leathery in feeling. There had been a small area of tuberculosis in the left lung's upper lobe, anteriorly placed, which had healed. There were 2000 cubic centimeters of slightly turbid fluid in the abdomen. The interior of the abdominal walls was studded with irregular small nodules, one half to four fifths of a millimeter in size. The omentum was thickened, fibroid, and adherent to the anterior abdominal wall on the right side, walled off by fluid. The mesentery was studded with pea-sized irregular nodules with hemorrhagic tops. The serous coat of the intestines had lost its gloss and a fine fibrinous layer was over all: in a good light, minute tubercle-like formations were evident in abundance.

In the lower eight centimeters of the cecum was an immense ulcerated thickened mass; the wall seemed to be one centimeter or more thick. The adhesions prevented the finding of the appendix. The upper end of the ulcerated area was thickened and sinuous. Other ulcerations in the intestines were evidently tubercular. All retroperitoneal glands were large and there was no caseation. The retroclavicular gland was large, removed. Sections showed that the condition was tubercular. Tubercle bacilli were found in maccrated tubercles from the peritoneum.

THE RESULT OF A CAMPAIGN AGAINST VENEREAL DISEASES BY A PHYSICIANS' ORGANIZATION.

BY PAUL B. BROOKS, M.D.,
Norwich, N. Y.

(Read at the joint meeting of the Medical Societies of the Counties of Chautauqua, Ontario and Seneca. Reprinted from the *New York State Journal of Medicine*, August, 1915.)

The city of Norwich, N. Y.—it became officially a city on January first—is one of the most active and progressive little cities "up state." While the thoughtful element in Norwich believe that their community was never much worse than the average community similar in character and extent of population, for twenty years or more, prior to December, 1913, certain conditions existed which many decent people regarded as a blot upon the fair name of Norwich. With a population of about eight thousand, there were no less than seven active houses of prostitution, mostly fairly well segregated, in and near the city. Irregular prostitution was not at all rare.

Periodically there were half-hearted outbursts of protest. On one occasion a village president declared his intention to "clean house." He was a business man, highly respected, and not lacking in courage; but somehow he was persuaded that the safe and sane course was that followed by each of his predecessors. And so, year after year, the Red Light District flourished, and its denizens grew more bold, in the belief that they were regarded as an essential element in the prosperity of Norwich.

During all these years the district contributed materially to the incomes of the local physicians. Illness was frequent among the residents, and they were invariably "good pay." Some of the houses paid liberally for medical examinations at intervals, but there was only now and then a physician who cared to add to his income by furnishing "health certificates" following these examinations. The madams had to content themselves with assuring their patrons that the girls had been examined.

It contributed indirectly by supplying new cases of gonorrhea and syphilis for treatment daily, and still more indirectly by keeping replenished the supply of cases of pelvic cellulitis, salpingitis, adult and infantile vaginitis, from among the wives and children of its patrons. The doctor who failed to get a new case of gonorrheal or syphilitic infection daily wondered at the "slump" in his practice.

For about a year, prior to December, 1913, there had been an "epidemic" of gonorrhea so general that it was a subject of comment by laymen, who, however, failed to connect it in any way with the long-established institutions in the Red Light District.

At about this time the members of the local physicians' club, at one of their meetings, fell to discussing the prevalence of gonorrhea and syphilis in Norwich. When the experiences and observations of individuals were brought together, in the aggregate they presented a picture which was startling. There was no argument as to the source of infection; most of the cases could be traced directly or indirectly to the established houses, or to a few known irregular prostitutes. The condition of some of the women who had been entertaining from five to twenty patrons nightly almost beggars description.

Among the doctors of Norwich there were no "reformers"; they were just reasonably practical, average doctors. After consultation they did that which doctors are reputed to do but rarely; they agreed. After due consideration, covering a considerable period, the idea of palliative treatment was cast aside as of no avail. They advised radical treatment, and that it be applied without delay. Their recommendations included the elimination of the Red Light District and every professional prostitute.

Several meetings were held with municipal officials, and the question thoroughly discussed and rediscussed. Some of the officials, including the municipal attorney, favored immediate action; some were noncommital, and some few actively opposed to any radical action. In the end, the officials voted that the district, which had been practically undisturbed for twenty years, should be wiped out. It was only necessary that the "management" of the various institutions be assured that the order to move meant business. Every known prostitute—and all of them were known to the police—departed to parts unknown, and at the end of a year none of them has returned.

From the day that the last resort was closed, there was an immediate falling off in the number of new cases of gonorrhea and syphilis, variously estimated at from seventy-five to ninety per cent. To-day, although it is obviously impossible to entirely eliminate irregular prostitution, new cases are extremely rare. There is apparently little, if any, increase in clandestine prostitution, rapes and assaults are no more frequent, and decent women and girls are safe, as they have always been, on the streets. According to the statements of physicians in the nearest village, eight miles distant, there has been a falling off in cases of venereal infection there during the same period.

While it is obviously impossible to draw conclusions from the results in Norwich as to what can or can not be accomplished through the same measures in larger cities, it is the belief of the writer, based upon considerable observation, that the results depend much more upon the sincerity of the authorities than upon the size of the city.

Segregation, licensing and examination, as carried out in some European cities, is acknowledged to be a failure, at least in so far as the prevention of venereal disease is concerned. From all available data, attempts at segregation or regulation in American cities, have been equally fruitless from the same standpoint, if not from every standpoint. It is a maxim in medicine that the rational treatment of disease lies in the removal of the cause. It being quite generally conceded that the public prostitute is the source of most of the venereal disease, the treatment is obvious.

In dealing with the prostitute, as a menace to public health, we must necessarily assume a somewhat selfish attitude. Until such a time as statewide action can be considered, each municipality must leave every other to fight its own battles. When the prostitute has been prevented from plying her "trade," she must then become a problem for the sociologist.

Physicians, as a class, are not much given to moralizing, or to fostering so-called "reform" movements. When bodies of medical men, with the courage of their convictions, and a willingness to give up "blood money" in the interest of public health and safety, cast off reserve and initiate a movement of this kind, it is the stronger for their reputed conservatism. We believe that what physicians have accomplished in Norwich they can accomplish elsewhere, and with equally satisfactory results.

A STUDY OF PILOCARPIN.*

BY R. J. SMITH, M.D.,
Bancroft, Idaho.

Pilocarpin is an alkaloid obtained from pilocarpus microphyllus or true jaborandi, with the formula, $C_{11}H_{16}N_2O_2$, existing in the plant with three other alkaloids two of which at least are antagonistic. The relative proportion of these in the crude drug varies to such a degree as to make the galenical preparations most unreliable. This is true of the true jaborandi and, of course, much more so of the many other varieties of jaborandi found on the market. This important and valuable remedy is almost unknown to the majority of physicians or known simply through its action as a sialogogue, because of the unreliability of the usual preparations. The use of the active principle, however, does away with uncertainty and we find that its field of action is very extensive.

The nitrate of pilocarpin is the preparation of the active principle usually used. Hypodermically the dose is gr. 1-12, per os gr. 1-64. It may be

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*Reprinted from *Northwest Medicine*, April, 1915.

given every fifteen minutes to effect, if sweating be desired, or every hour or two for sedative effect.

Pilocarpin is an example of the double action of a drug through modification of the dose. In a small dose it cures ptyalism; in larger dose, it is opposite in action, it produces ptyalism. In small dose it is an arterial sedative, lessening rapidity of the heart action and reducing temperature. In sthenic cases it is often to be preferred to aconitin. In large doses it is antispasmodic, as in rigid os uteri. It produces profuse perspiration, ptyalism, sometimes vomiting. All the secretions are augmented, the urine, saliva, sweat, bile, tears, gastric juice, milk and bronchial mucus.

Pilocarpin is useful in jaundice to relieve itching. Here the dose is small and continued at intervals to effect. As a diaphoretic it is unequalled. In acute pulmonary diseases, due to cold, a full dose will often break the attack. In acute rheumatism, also, the attack may be jugulated by a full hypodermic dose of gr. 1-12 to 1-6. It relieves the acute pain and the swelling very promptly. It is a valuable remedy in eclampsia, to produce free elimination, administering veratrin to reduce the pulse. Also in uremia, for pilocarpin not only increases the water of the urine but also the urea, and urea is thrown off in quantity through the skin. It is a positive remedy for all muscular pains. Lumbar myositis, lumbago, is often relieved by a full dose when other remedies fail. Pleurodynia and torticollis are benefited, as are severe abdominal pains of a colicky nature. It will jugulate an attack of parotitis. Hiccough is frequently stopped by a timely dose. Pleurisy is rapidly relieved by pilocarpin, in conjunction with bryonin.

In the eruptive fevers, with slowness of development of the eruption, pilocarpin is indicated. It is a specific in erysipelas of the sthenic type. It is one of the best means for breaking the chill of malaria. Asthma, pertussis, edema of the glottis, mania, dryness of the mouth from any cause, are all very successfully treated by pilocarpin. In eye, ear, nose and throat diseases it has an important place. In serous iritis, plastic and traumatic iritis, in rheumatic iritis, it absorbs the exudate rapidly and relieves the patient of his discomfort. In traumatism of the eye, with effusion of blood into the aqueous or vitreous, in retinal hemorrhages and separation of the retina, it has seemed to be of use, causing absorption of the blood. In some cases of deafness it has either lessened the amount of deafness or cured it entirely. It is often useful in tonsillitis in the early stages. In atrophic rhinitis and laryngitis it relieves. It stimulates the growth of hair, applied locally and given internally and is said to darken it in color. It removes serous effusions and is indicated when there is dryness of the tissues or atrophy of mucous structures. Pilocarpin is antagonistic to atropin and, if too profuse action of the former occurs, atropin will counteract that effect. *It is contraindicated in weak heart or depression.*

THE HOROWITZ-BEEBE TREATMENT FOR CANCER.

A new "treatment for inoperable cancer" has, during the last few months, been widely acclaimed in the lay press and in some medical journals. The first public announcement of this treatment appears to have been published in the New York *Times*, February 19, 1915, and was to the effect that a "new cancer serum" (called by the newspapers "autolysin") had been devised at the General Memorial Hospital in New York City and used with curative effect in hopeless cases in the last stages of the disease. As the General Memorial Hospital is a research institution associated with the Cornell University Medical College, the report received more attention than it might otherwise have achieved. March 6, 1915, a statement, signed "for the Medical Board of the General Memorial Hospital" by James Ewing, W. B. Coley, Richard Weil and S. P. Beebe, appeared in several medical journals. It said:

"While it is impossible to discuss in detail every error in the report, it is possible to deny categorically the chief assertions made in the article."

Among the other statements made in this denial is the following:

"We know of nothing that seems likely to prove a constitutional remedy for advanced cancer. All we hope to do at the General Memorial Hospital is in the line of painstaking study of different forms of cancer, the persistent application of well attested remedies and palliatives in the disease, and the investigation of such other methods as present a sound theoretical basis always with strict regard to the interests of the individual patient."

Nevertheless, in spite of the statement of this committee, there appeared shortly afterward an article signed by S. P. Beebe, entitled "A Treatment for Inoperable Cancer—A Preliminary Report." The other members of the board of the Memorial Hospital do not appear as co-authors.

As a scientific contribution, this article is a remarkable statement, especially when it is kept in mind that the author was connected as professor of experimental therapeutics with a leading medical school. The author describes the introduction of the system of treatment by "Alexander Horowitz, Ph.D., an Austrian biologist and Chemist," and its trial at the General Memorial Hospital. Despite the previous reference to "sound theoretical basis," there is no statement made of preliminary investigations of the action of this therapeutic agent or its multitudinous components on anything except human patients, although coincident experiments with sarcoma rats are mentioned. The composition of the preparation is not disclosed as to quantities, but it is said to be made from some twelve different herbs. As one critic has said, apparently the only ingredient overlooked in the preparation of the new remedy was a rabbit's foot.

The cases reported number sixteen. Three were superficial skin cancers, which are said to have been completely healed under the influence of the poultice, as, of course, they might well have done under any escharotic application. In only one of the cases is any data given as to the length of time the patient was under observation—but evidently this is far too brief for any one to draw conclusions as to results. Another group of seven "hopelessly incurable and inoperable" cases is next mentioned. Of these, five patients died under treatment and the other two refused to continue it, although improvement is said to have occurred in three of the seven. The remaining six cases were treated by Beebe and J. Wallace Beveridge in another hospital by injections of the extract into the tumor tissue, with the production of necrosis and diminution in size of the tumors in some cases, although one of these patients died.

Aside from this very unpromising report, apparently all that has been published in any medical journal are stereotyped excerpts from it which have appeared simultaneously as abstracts in several medical journals. If this were all that had been published, there would probably not be the prevailing excitement over the subject. The greatest marvel, perhaps, was why this report was published at all, dealing as it does with only sixteen cases, under only a short period of observation, with results that are apparently no better than could be secured by applying arsenic paste or injecting a solution of any escharotic substance into the tumors. What is there of scientific interest or therapeutic advance in such a procedure? Why should any person with critical judgment or scientific training of the slightest degree rush into print with a cancer treatment of but a few weeks' or months' trial, and founded on nothing more theoretically sound or inspiring than a Chinese materia medica? Why, too, asks *The Journal of the American Medical Association*, should the lay press be furnished with literary articles on the subject by some of those engaged in promulgating this treatment, and why should these articles be embellished with exquisite half-tone reproductions of the features of the experimenters?

The status of the Horowitz-Beebe method of treatment of cancer can be estimated by applying an average knowledge of pharmacology, sociology, psychology and, above all, we fear, economics.

THE WRITING OF MEDICAL PAPERS.

In view of the approach of the session for meetings of our large medical bodies and the fact that many of our physicians will feel called upon to prepare papers to be read at these meetings, it is timely to offer a few suggestions concerning the preparation of the average medical paper. It can not be too often impressed upon the profession that prolix, long drawn-out papers are the bane of medical meetings. The acceptable and successful writer is one who expresses himself concisely and accurately in a comparatively small number of pages. The writer who occupies an undue amount of space is unjust to the other members on the program, wearies his audience and fails to make a lasting impression. Perhaps the most objectionable feature of a paper is the excessive presentation of symptoms, diagnostic features and modes of treatment abstracted from the textbooks. If these be briefly summarized and one's time be chiefly devoted to new features which present themselves less commonly to the profession, an interest will probably be excited which will enhance the author's prestige and gratify his audience.

Since most of the papers read before societies are commonly published, the editor takes a lively interest in the matters above discussed. He receives with delight a short, pithy and well-digested paper, knowing that it will be received with pleasure by his readers. The ordinary paper of undue length he receives with misgivings and hesitates about its publication. It often seems necessary to return such to the writer for condensation or else he assumes the responsibility of abbreviating it himself. In either case the writer is generally disturbed and is apt to receive ungraciously suggestions of curtailing his production, although this course may seem advisable. In this connection it is noticeable that papers published from the pens of the leaders of our profession are usually of the character herein advocated, which thereby might be taken as a model by all of us.—Editorial, *Northwest Medicine*, April, 1915.

HATS OFF TO "JUDGE."

We publish with pleasure the following tribute to the medical profession from *Judge*. It is in striking contrast to many untrue and unkind statements published in another periodical of the same class:—

THE DOCTOR'S SIDE OF IT.

Laugh, if you like, at the doctor's mistakes—
And I reckon we all make a few!—
He's giving the universe more than he takes,
Which is more than the most of us do!

Feather your arrows with humorous chaff
And tip them with satire and bile,
But don't ask your target to join in the laugh—
He's entirely too busy to smile!

For General Practitioner, Army of Health,
Is fighting the terrors you fear,
While you are discussing his "ill-gotten wealth."
(Most likely, a thousand a year.)

He's saving you sickness and giving you strength,
And it's easy to laugh when you're strong;
But one of your terrors may get you at length
And alter a pitch in your song!

Then you will remember the jests you have made,
And scorn his assistance, no doubt,
Or will you entreat him to fly to your aid
With the skill you have jested about?

—*Texas Medical News.*

QUARANTINE AND CONTROL OF COMMUNICABLE DISEASES.

Harrisburg, August 21, 1915.

To the Editor:—

Enclosed please find the new organic law of the Commonwealth governing quarantine and the control of certain communicable diseases.

You will note that in the second class townships in future the health officers will maintain a minimum quarantine period of sixteen days for measles, German measles, mumps and chicken pox; that legal provision is made to allow health authorities when official records give satisfactory information to transfer to other premises and readmit to school those who have had previous attacks of scarlet fever, measles, German measles, mumps and chicken pox. A careful perusal of the act will readily disclose any other important changes in the quarantine laws.

Municipalities having Boards of Health, however, may, as in the past, extend their minimum requirements beyond those of the act and as heretofore are not permitted to abridge the minimum requirements of the act.

Very truly yours,
Samuel G. Dixon.

AN ACT

To safeguard human life and health throughout the Commonwealth, by providing for the reporting, quarantining, and control of certain communicable diseases, and for the prevention of infection therefrom, and prescribing penalties for violations of the act.

Public Health.

Duty of physicians.

Diseases which must be reported.

Details of the report.

Section 1. Be it enacted, &c., That every physician, practicing in any portion of this Commonwealth, who shall treat or examine any person suffering from or afflicted with actinomycosis, anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), epidemic dysentery (bacillary or amebic dysentery), erysipelas, German measles, glanders (farcy), rabies (hydrophobia), leprosy, malarial fever, measles, mumps, pneumonia (true), puerperal fever, relapsing fever, scarlet fever, (scarlatina, scarlet rash), smallpox (variola, varioloid), tetanus, trachoma, trichiniasis, tuberculosis in any form, typhoid fever, para typhoid fever, typhus fever, whooping-cough, yellow fever, anterior poliomyelitis, impetigo contagiosa, pellagra, scabies, or uncinariasis, shall, if said case shall be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city, or borough; and, if said case shall be located in a township of the second class, or a city, borough, or township of the first class, not having a board of health or body acting as such, to the health officer appointed by the State Department of Health for such district; upon blanks supplied for that purpose, in which report he shall, over his or her own signature, state the name of the disease, and the name, age, sex, color, nativity, and occupation, if any, of the person suffering therefrom, together with the street and house number of the premises in which said person may be located, or otherwise sufficiently designate the same, the date of the onset of the disease, the name and occupation of the householder in whose family the disease may have occurred, the number of children in said household attending school and the name or names of the school or schools so attended, together with such information relating to said case as may be required by said health authorities and the State Department of Health.

Duty of health officers.

Quarantine.

Posting of premises.

Section 2. Upon receipt by the health authorities of any township of the first class, borough, or city, or by the health officer of the State Department of Health, of a report of the existence of a case of anthrax, bubonic plague, cerebrospinal meningitis (epidemic) (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), German measles, glanders (farcy), leprosy, malarial fever, measles, mumps, relapsing fever, scarlet fever, (scarlatina, scarlet rash), smallpox (variola, varioloid), typhoid fever, para typhoid fever, typhus fever, whooping-cough, or yellow fever, the said health authorities, or the health officer of the State Department of Health, as the case may be, shall quarantine or cause to be quarantined the premises in which such disease exists, and any person or persons who has or have been exposed thereto, in the manner prescribed by the rules and regulations both of said health authorities and the State Department of Health; and shall post or cause to be posted in a conspicuous place or places, upon the premises in which said disease may be located, a placard or placards upon which shall be printed in conspicuous letters the name of the disease from which the person or persons in said house or premises is or are suffering, with the warning that the said premises are quarantined, that no person or persons other than the attending physician and trained nurse shall enter or leave the said premises, except by permission of the health authorities, and setting forth the penalties prescribed by this act for violations of quarantine: Provided, That variola or varioloid shall be placarded as "smallpox," and that diphtheritic croup, membranous croup, and putrid sore throat shall be placarded as "diphtheria," that scarlatina and scarlet rash shall be placarded as "scarlet fever," and that para typhoid fever shall be placarded as "typhoid fever:" Provided further, That, in addition to the placarding aforesaid, said health authorities may, for the purpose of enforcing quarantine regulations, place a guard or guards over said house or premises.

Proviso.

Proviso.

Guarding of premises.

Section 3. That the said placard or placards shall remain in place until the expiration of the quarantine period fixed by the health authorities, and the recovery, death, or removal of the person or persons affected; and shall only be removed by the health officer, at which time he shall disinfect the premises, except for typhoid fever and para typhoid fever, in accordance with the rules and regulations of the health authorities and the State Department of Health regarding the destruction and disinfection of infected bedding, clothing, and other articles which have been exposed to infection, and the disinfection of rooms, premises, and inmates.

Duration of placarding.

Disinfection.

Section 4. The quarantine period for anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, typhus fever, yellow fever, relapsing fever, leprosy, and whooping-cough shall be until the recovery, death, or removal of the patient so suffering, and shall be determined in accordance with the rules and regulations of the health autborities. The quarantine period for smallpox (variola, varioloid), and scarlet fever (scarlatina, scarlet rash), shall be a minimum period of thirty days, or until such time thereafter as the last person in the premises so suffering shall have fully recovered, or until death or removal. The quarantine period for diphtheria (diphtheritic croup, membranous croup, putrid sore throat), shall be a minimum period of twenty-one days, or until complete recovery or the death or removal of the patient: Provided, That if antitoxin has been used for curative purposes for the patient, and for the immunizing of all of the inmates of the premises, and two negative bacteriological cultures have been secured from the diseased area of each patient on the premises, for two successive days, the minimum period of quarantine may be fourteen days. The quarantine period for measles, German measles, chicken-pox, and mumps shall be for a minimum period of sixteen days, or until the recovery of the last person on the premises so suffering, or until complete recovery or the death or removal of the patient.

Quarantine periods.

Proviso.

If antitoxin has been used. Cultures.

Section 5. No child or other person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders, (farcy), chicken-pox, mumps, or whooping-cough shall be permitted to attend any place of amusement or any church or any other public gathering, or to be exposed on any public street, or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other similar schools, are hereby required to exclude any of such persons from said schools, such exclusion to continue until the case has recovered, the quarantine lifted, and the premises thoroughly disinfected.

Exclusion from places of amusement,public gatherings, places of business, churches, schools, etc.

Duty of teachers and school officers.

Period of exclusion.

Section 6. No child or other person suffering from scarlet fever (scarlatina, scarlet rash) shall be permitted to attend any place of amusement, or any church, or other public gathering, or to be exposed on any public street, or in any store, shop, factory, or other place of business or be permitted to attend any public, private, parochial, Sunday, or other school; and the teachers of public schools and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday or other schools, are hereby required to exclude any and all such persons and children from said school; such exclusion to continue for a period of ten days following the removal of quarantine and a thorough disinfection of the premises, subject to a certificate of complete recovery furnished to the health authorities by the attending physician.

Scarlet fever.

Exclusion from school.

Duty of teachers and officers.

Period of exclusion.

Section 7. No child or other person residing in the same premises with any person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), Asiatic cholera, smallpox (variola, varioloid), typhus fever, yellow fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, leprosy, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, chicken-pox, or mumps, shall be permitted to attend any place of amusement, or any church, or other public gathering, or to be exposed, except by permission of the health authorities, on any public street or in any store, shop, factory, or other place of business, or be permitted to attend any public, private, parochial, Sunday, or other schools; and the teachers of public schools, and the principals, superintendents, teachers, or other persons in charge of private, parochial, Sunday, or other similar schools, are hereby required to exclude any and all such persons from said schools; such exclusion to continue until quarantine is lifted and the premises thoroughly disinfected.

Residents of premises.

Duty of teachers and officers.

Exclusion.

Section 8. Any child or person residing on the same premises with any person suffering from anthrax, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), or typhus fever may be allowed after taking a disinfecting bath and putting on disinfected clothing, to remove from said premises and take up his or her residence on other premises, and may after such removal be admitted into any of the said schools; and any child or person residing on the same premises with any one suffering from diphtheria (diphtheritic croup, membranous croup, putrid sore throat), may be allowed, after taking a disinfecting bath and putting on disinfected clothing, and after antitoxin has been administered for immunizing purposes, to remove from the said premises and take up his or her residence on other premises occupied only by adults; and may, after five days from said removal, be admitted into any of the said schools; and any child or person residing on the same premises with any child suffering from scarlet fever, (scarlatina, scarlet rash), measles, German measles, mumps, or chicken-pox, may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises, and take up his or her residence on other premises occupied only by adults, or by children who are immune to the disease (scarlet fever, scarlatina, scarlet rash, measles, German measles, mumps, or chicken-pox), existing on the said premises from which the said child or person has removed, such immunity being shown by the official health records, and may, fourteen days after such removal, be admitted to any of the said schools: Provided, That if the child or person residing on the premises with any person suffering from any of the said diseases (scarlet fever, scarlatina, scarlet rash, measles, German measles, mumps, or chicken-pox), and removing therefrom as above provided, is himself or herself immune from the disease existing on the said premises, by virtue of a former attack, this fact being shown by the official health records or by other evidence satisfactory to the health authorities, such immune child or person may, on the day following such removal, be admitted to any of the said schools; and any child or person residing on the same premises with any person suffering from relapsing fever may be allowed, after taking a disinfecting bath and putting on disinfected clothing, to remove from the said premises, and take up his or her residence on other premises, and may, after ten days from such removal, be admitted to any of the said schools.

Disinfecting bath, etc.

Removal.

Bath, etc.
Use of antitoxin.

Admission to school.

Removal.

Immunes.

Proviso.

Admission to school.

Section 9. That every teacher, principal, superintendent, or other person or persons in charge of any public, private, parochial, Sunday, or other school, having in any such school any child or person showing an unusual rash or skin eruption, or complaining of soreness in the throat, or having symptoms of whooping-cough, or any disease of the eye, shall immediately exclude such child or other person from the schools, pending the action of the health authorities, and shall report such fact to the health officer of the city, borough, or township, giving the name and residence of such child or other person.

Duty of teachers, etc.

Symptoms of disease.
Exclusion.

Reports.

Section 10. No child or other person, excluded from any school by the provisions of this act, shall be readmitted thereto unless he or she, or some person on his or her behalf, shall furnish to the principal, superintendent, or teacher, or other person in charge of said school, a certificate setting forth that the conditions for such readmission prescribed by this act have been complied with; which certificate shall be signed by a person to be designated for that purpose, in cities, boroughs, and townships of the first class, by the health authorities thereof, exclusively; and in townships of the second class, and cities, boroughs and townships of the first class, not having boards of health

Readmission to school.

Certificate.

or bodies acting as such, by the State Department of Health; and the registry of all public, private, parochial, Sunday, and other schools shall exhibit the names and residences of all children and persons excluded therefrom or readmitted thereto, agreeably to the provisions of this or any other act of Assembly; and said register shall be open at all times to the inspection of the city, borough, or township authorities and the State Department of Health, and their respective officers and agents.

Registration of pupils and persons.

Inspection of register.

Section 11. Blanks whereon to make the reports and certificates required by this act shall be supplied, in cities, boroughs, and townships of the first class, by the health authorities thereof, respectively; and in townships of the second class, and in cities, boroughs, and townships of the first class, not having boards of health or bodies acting as such, by the State Department of Health.

Blank reports, etc.

Section 12. It shall be the duty of the health authorities of cities, boroughs, and townships of the first class, respectively, to furnish daily, by mail or otherwise, to principals, superintendents, teachers, and other persons in charge of public, private, parochial, Sunday, and other schools, a printed or written bulletin containing the name, location, and disease of all persons suffering from any of the diseases mentioned in sections five and six of this act, upon receipt by them of reports of such cases from physicians, as required by section one of this act; and such bulletin shall be daily furnished to such persons in charge of such schools in townships of the second class, and in cities, boroughs, and townships of the first class, not having boards of health or bodies acting as such, by the health officer for the State Department of Health.

Daily reports of health authorities.

Report by health officer.

Section 13. Upon the removal to a hospital or other place, or upon the discharge by the recovery or death of any person or persons who has or have suffered from tuberculosis or any of the diseases mentioned in section two of this act, all premises which have been occupied by the said person or persons while suffering from any of the said diseases shall be fumigated and disinfected, or destroyed, at such time and in such manner as may be authorized and required by the health authorities.

Upon removal or discharge.

Fumigation, disinfection or destruction of premises.

Section 14. No person suffering from any of the diseases mentioned in section two of this act, nor anyone who has charge of the persons so suffering, shall enter any hired vehicle or other public conveyance, or permit anyone in his or her charge who is suffering therefrom to enter such vehicle, without previously securing the consent of health authorities, and notifying the owner or driver thereof that he or she, or the person in his or her charge, is so suffering; and the owner or driver of such vehicle shall immediately provide for the disinfection of such conveyance, under the direction of the health authorities, after it has with the knowledge of such owner or driver conveyed any such sufferer.

Hired vehicles or public conveyance.

Disinfection.

Section 15. No person suffering from anthrax, bubonic plague, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), chicken-pox, Asiatic cholera, diphtheria (diphtheritic croup, membranous croup, putrid sore throat), measles, German measles, glanders (farcy), mumps, relapsing fever, scarlet fever (scarlatina, scarlet rash), smallpox (variola, varioloid), typhus fever, typhoid fever, yellow fever, or whooping-cough, shall wilfully expose himself or herself in any street or public place, or public conveyance, nor shall any person in charge of anyone so suffering thus expose the sufferer.

Exposure in public places prohibited.

Section 16. No person, without previous disinfection, shall give, lend, sell, transmit, or expose any bedding, clothing, rags, or other articles which have been exposed to infection from any of the diseases mentioned in section one of this act: Provided, That such restriction shall not apply to the transmission of articles, with proper precaution, for the purpose of having the same disinfected.

Use of infected clothing, bedding, etc.

Proviso.

Section 17. No person shall let any room, house, or part of a house, in which there has been a person suffering from tuberculosis or any of the diseases mentioned in section two of this act, without having such room, house, or part of a house, and all articles therein, previously disinfected to the satisfaction of the health authorities. The keeping of a hotel, boarding house, or apartment-house shall be deemed as letting a part of a house to any person who shall be admitted as a guest into such hotel, boarding-house, or apartment-house.

Letting of room or house.

Hotels, boarding-houses, etc.

Rules and regulations may be established by the health authorities.

Section 18. The health authorities of the several townships, boroughs, and cities of this Commonwealth may, and they are hereby authorized and empowered to, establish additional rules and regulations regarding the isolation and quarantine of persons who may be suffering from any of the diseases mentioned in section one of this act, and for the destruction, disinfection, and fumigation of bedding, clothing, or other infected articles, and for the disinfection and fumigation of houses and premises, and for the carrying out of the provisions of this act, as they may in good faith declare the public safety and health demand; which rules and regulations they may, from time to time, alter or amend, but in no instance shall such rules abridge in any way the provisions of this act or the regulations of the State Department of Health.

Burial preparations.

Duty of undertaker.

Section 19. In the preparation for burial of the body of any person who has died of Asiatic cholera, glanders (farcy), bubonic plague, smallpox (variola, varioloid), yellow fever, typhus fever, scarlet fever (scarlatina, scarlet rash), relapsing fever, cerebrospinal meningitis (epidemic), (cerebrospinal fever, spotted fever), diphtheria (diphtheritic croup, membranous croup, putrid sore throat), tetanus, or leprosy, it shall be the duty of the undertaker, or person acting as such, to thoroughly disinfect and place such body within the coffin or casket in which it is to be buried within six hours after being first called upon to take charge of the same, provided said call is made between the hours of five ante meridian and eleven post meridian; otherwise, such body shall be placed in such coffin or casket within twelve hours; the coffin or casket then to be closed tightly, and not again opened unless permission be granted by the health authorities for special and satisfactory cause shown.

Interment.

Section 20. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall not remain unburied for a longer period of time than thirty-six hours after death, unless special permission be granted by the health authorities extending the time during which said body shall remain unburied, for special and satisfactory cause shown. The undertaker, or person acting as such, shall be responsible for any violation of the provisions of this section.

Funeral services.

Private.

Section 21. All services held in connection with the funeral of the body of a person who has died of any of the diseases mentioned in section nineteen of this act shall be private, and the attendance thereat shall include only the immediate adult relatives of the deceased, who may not at the time be under absolute quarantine restrictions, and the necessary number of adult pall-bearers, and any advertisement of such funeral shall state the cause of death.

Body shall not be taken into public building.

Section 22. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall, in no instance, be taken into any church, chapel, public hall, or public building, for the holding of funeral services. The undertaker, or person acting as such, and the sexton, janitor, or other person having control of such church, chapel, public hall, or public building, shall be responsible for any violation of the provisions of this section.

Conveyances at funeral.

Section 23. No undertaker, or person acting as such, at the funeral or burial of the body of a person who has died of any of the diseases mentioned in section nineteen of this act, shall furnish or provide for such funeral or burial more than the necessary number of conveyances for such adult relatives as are mentioned in section twenty-one of this act, and pall-bearers; and all such conveyances shall be fumigated and disinfected, at such time and in such manner as may be directed and required by the health authorities.

Vehicle for conveyance of the body.

Section 24. The body of a person who has died of any of the diseases mentioned in section nineteen of this act shall not be conveyed from any dwelling, or other building or place, to any cemetery or other point or place, except in a hearse, or other vehicle used for the purpose of conveying corpses only, or in such vehicles as shall be satisfactory to the health authorities, and under such regulations as they may in any case adopt. The undertaker, or person acting as such, having charge of the funeral or transportation of such body, shall be responsible for any violation of the provisions of this section.

Weekly reports by health authorities.

Section 25. The health authorities of the several cities, boroughs, and townships of the first class, shall, at the end of each week, and for the fraction of each week occurring at the end of each month, report to the State Department of Health, upon blanks supplied for that purpose, a list of all cases of communicable diseases, mentioned in section one of this act, which have been reported to them during said period; which report shall contain the name of each person suffering therefrom, respectively, and his or her age, sex, color, and nativity, together with the name of the disease and the date of the onset thereof; and, in the event of no reports of any of said diseases having been received by the aforesaid health authorities, respectively, during any said period, that fact shall be reported to the State Department of Health.

Details.

Section 26. Any person who shall remove, deface, cover up, or destroy, or cause to be removed, defaced, covered up, or destroyed, any placard relating to any of the diseases mentioned in section two of this act, shall, for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein such offense was committed, be sentenced to pay a fine of not less than ten ($10) dollars or more than one hundred ($100) dollars, to be paid to the use of said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten days or more than thirty days, or both, at the discretion of the court. Any person, other than the attending physician or trained nurse, who shall enter or leave any quaratined premises, without having secured permission from the health authorities; or who shall violate any of the quarantine restrictions imposed by this act or by the rules and regulations of the health authorities of any city, borough, or township of the first class, or the rules and regulations of the State Department of Health; or who shall interfere with a health officer or any other duly qualified agent of the State Department of Health, or of any local board or department of health, in the discharge of his official duties in the placarding, quarantining, disinfecting or releasing from quarantine of any premises, or in the investigation of any alleged case of a quarantinable disease, shall, for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein said offense was committed, be sentenced to pay a fine of not less than fifty ($50) dollars or more than one hundred ($100) dollars, to be paid to the use of the said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court.

Removal, defacement, etc., of placards.

Penalty.

Disobedience of quarantine regulations, etc.

Interference with health officers.

Penalty.

Any physician, undertaker, teacher of a public school, principal of a school, superintendent of a Sunday school, sexton, janitor, parent, or guardian, or any other person or persons, who shall fail, neglect or refuse to comply with, or who shall violate, any of the provisions of this act, shall, for every such offense, upon conviction thereof in a summary proceeding before any magistrate or justice of the peace of the county wherein said offense was committed, be sentenced to pay a fine of not less than twenty ($20) dollars or more than one hundred ($100) dollars, to be paid to the use of said county, and costs of prosecution, or to be imprisoned in the county jail for a period of not less than ten or more than thirty days, or both, at the discretion of the court.

Violation of provisions of this act.

Penalty.

Section 27. Section one (except the enacting clause thereof) and sections two, three, four, five, six, seven, eight, nine, ten, eleven, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, and nineteen of an act, entitled "An act to provide for the more effectual protection of the public health in the several municipalities of this Commonwealth," approved June eighteenth, one thousand eight hundred and ninety-five; and the act of May fourteenth, Anno Domini nineteen hundred and nine, entitled "An act to safeguard human life and health throughout the Commonwealth, by providing regulations for the control of certain communicable diseases and the prevention of infection therefrom, and prescribing penalties for violation of said regulations," and all other acts, or parts of acts, inconsistent herewith, are hereby repealed.

Repeals.

Part of act of June 18, 1895, cited for repeal.

1895, P.L. 203.

Act of May 14, 1909 (P.L. 855) cited for repeal.

1909, P.L. 855.

Approved—The 28th day of May, A.D. 1915.

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The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this Journal.

ATHENS, SEPTEMBER, 1915.

THE PHILADELPHIA SESSION.

The JOURNAL for August gave the preliminary program, list of members of the House of Delegates, and other particulars regarding the sixty-fifth annual session in Philadelphia this month. Everything is in readiness for the "best ever" meeting of our state society which has the reputation of having the best annual sessions of any state society. Our members will find all that they will need in order to have a good time scientifically, socially and from a business point of view. The scientific program speaks for itself. It is not so crowded but that there will be ample time for discussions. The exhibit itself will be well worth a trip to Philadelphia. The social features will rest the members and afford delightful entertainment for the ladies. If you have not already made your arrangements to attend, begin at once to make your plans to spend from four to eight days in the City of Brotherly Love, and do not forget the trip to Atlantic City with free entertainment at the larger board-walk hotels. If you have not the money for the trip tell your patrons that you need the money to attend the annual meeting of your state society in their interest. They do not want to trust their lives in the hands of stay-at-home doctors. We will look for each other there. When you walk up to one of the physicians please say I am doctor So-and-so from Blankville that we may all know one another.

S.

NO STENOGRAPHERS AT PHILADELPHIA.

The Committee on Scientific Work decided to follow the plan of last year of having no stenographers. The author of each paper is requested to supply the one designated on the program to open the discussion with a copy of his paper so that the opening discussion can be properly prepared and typewritten ready for delivery after the reading of the paper. It is thought that in this way time will be saved and better discussions secured. It will also tend to spur up any author who may be inclined to leave the completion of his paper until the last moment. S.

FREE STENOGRAPHIC SERVICE AT PHILADELPHIA.

A competent stenographer will be in Room 104, adjoining the Junior Cotillion Room, the meeting place of the House of Delegates, and will be prepared to ,typewrite reports and resolutions for officers, committeemen and members of the House of Delegates without charge for such service. Members preparing resolutions or reports for the House of Delegates can facilitate the transaction of business by having same written in triplicate, one copy for the secretary, one copy for the stenographer and one copy for the reference committee. If reports of reference committees are written in triplicate one copy can be retained by the committee, one copy given to the secretary and another to the stenographer.

When not engaged in work connected with the House of Delegates the services of the stenographer will be at the disposal of any member of the society for society matters without charge. S.

PENNSYLVANIA AS A MEDICAL CENTER.

Dr. John B. Roberts, Philadelphia, has given notice that he will present the following resolution at the general meeting of the society at Philadelphia, Tuesday morning, September 21:—

Resolved, That, the House of Delegates concurring, the president of this society, the chairman of its board of trustees, the secretary of this society, and a member from each county medical society to be selected by the three mentioned officers of this society, be and are hereby appointed a committee to consider and to report next year on the possibility of reviving and maintaining the eminence of the state of Pennsylvania as a center of medical education, undergraduate, graduate and postgraduate, and to suggest means and methods to that end.

S.

SHALL THE COUNTY PRESIDENTS BE EX-OFFICIO MEMBERS OF THE HOUSE OF DELEGATES?

The importance of this question depends upon three factors mentioned in the order of their value: First, the spirit in which the discussion of the question shall be carried on; second, the ready acquiescence of the minority in the will of the majority whichever way the question may be decided, and third, and least in importance, the real merits of the proposition.

If representation is to be strictly according to the membership then it is clear that the presidents should not be *ex-officio* members of the House, but that each county society should have at least one representative and extra representatives in proportion to their membership. Probably the smaller the membership of the House, the better and more promptly the business will be transacted. Would not our largest society be as well represented by ten delegates as by fifteen or twenty?

The Constitution of the United States was drafted in Philadelphia in 1787, and its Preamble—"We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution of the United States of America"—is often referred to as a model of classical literature. The several constitutions of the Medical Society of the State of Pennsylvania could never be singled out as literary models, but the men drafting the same have always and unselfishly desired "to federate and bring into one compact organization the entire medical profession of the state of Pennsylvania; to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of state medicine, so that the profession shall become more useful to the public in the prevention and management of disease and in prolonging and adding comfort to life."

The Constitution of the United States provides for two houses, the lower to represent the people, the upper to represent the states. The plan to restore the *ex-officio* members of the House of Delegates is in part an attempt to combine this double representation in one body. With some it has never been popular. That loyal member and astute parliamentarian, Alexander R. Craig, has always contended that the House of Delegates should be a strictly delegate body, and that, therefore, the county president should not be admitted as an *ex-officio* member.

It may be well briefly to review some of the changes that have been made from time to time in the organic law of our society. Until 1902, the smallest county society had the same representation in the Committee on Nominations as the largest society, and this committee selected the officers, the Trustees, the chairman of the Committee on Arrangements, the chairman and members of the Committee on Publication (which also acted as the finance committee), the delegates to the American Medical Association, and the place for the next meeting. (Page 11, Transactions, 1891.) It is true that the report of the committee had to be ratified by the general meeting of the society, but practically the committee composed of one member from each county society having a member present acted for the whole society. This plan seemed to work well. Probably the closest, most lively, and most protracted contest under this plan was in Philadelphia in 1894. Thirty-six of the fifty-three county societies were represented in the committee. Dr. W. Murray Weidman, Reading, was elected chairman, and Drs. Edward Jackson, Philadelphia, and J. J. Buchanan, Pittsburgh, secretaries. The momentous question to be decided was not a matter of the country against the city but the selection of one of two distinguished Philadelphia members for president. Several ballots were taken, each resulting in a tie. Motions to adjourn the meeting of the committee were voted down, until finally one member who had voted for Dr. E. E. Montgomery cast a blank ballot allowing Dr. John B. Roberts to be elected.

An examination of the transactions shows that while the society was working under the plan of a nominating committee presidents were selected as follows: From Philadelphia, Samuel Jackson, Rene La Roche, D. Francis Condie, Wilson Jewell, Samuel D. Gross, Washington L. Atlee, D. Hayes Agnew, Andrew Nebinger, Henry H. Smith, Richard J. Levis, John B. Roberts, E. E. Montgomery, William M. Welch; Allegheny, James King, A. M. Pollock, Robert B. Mowry, E. A. Wood, J. B. Murdoch, William S. Foster, Thomas D. Davis; Lancaster, Samuel Humes, John L. Atlee, Jacob L. Ziegler, Alexander Craig; Berks, John P. Heister, Edward Wallace, Samuel L. Kurtz, W. Murray Weidman; Northampton, Charles Innes, Traill Green; Schuylkill, James S. Carpenter, John T. Carpenter; Bradford, George F. Horton, Ezra P. Allen; Blair, J. D. Ross, Crawford Irwin; Dauphin, John Curwen, Henry L. Orth; Erie, William M. Wallace, J. L. Stewart; Lycoming, J. S. Crawford, H. G. McCormick; Luzerne, Rees Davis, George W. Guthrie; Chester, Wilmer Worthington; Montgomery, Hiram Corson; Huntingdon, Jacob M. Gimmill; Beaver, Smith Cunningham; Indiana, William Anderson; Cumberland, S. B. Kiefer; Crawford, William Varian; Clinton, Francis P. Ball.

Thirteen of these fifty-three presidents were selected from Philadelphia. The fact that one fourth were from our largest city is presumptive evidence that the country did not discriminate against the city. A glance at the names of the men outside Philadelphia and Pittsburgh will show that not all the men who have honored the profession and conspicuously served the commonwealth are from these two cities.

A committee to suggest changes to the By-Laws, of which the writer was chairman, reported at a meeting in Allentown in 1902, recommending a revised set of By-Laws, which, so far as representation in the legislative body is concerned, was practically the same as the Doctor Murray amendments to be considered at Philadelphia. These By-Laws were adopted, and with minor changes from year to year were continued in force until modified at Pittsburgh last year.

The plan of having the president of a county society, or in his absence the secretary, an *ex-officio* member of the House of Delegates, has been called the writer's pet scheme, and for this reason he may be allowed to give some reasons for its consideration. As already intimated an attempt has been made to pattern after Congress by combining the two legislative bodies in one. This may or may not have merit. The plan increases the number of counties represented in the House. Even with this opportunity for double representation there were sixteen counties not represented in the House in 1914; in 1913 there were thirteen counties not represented; in 1912 there were twenty-three; in 1911, sixteen; and in 1910, thirteen.

For various reasons the larger society is more apt to be represented by its full delegation than the smaller society. It is probable that the society will meet in Philadelphia and also in Pittsburgh at least every third year. This naturally means two things: The state society will be greatly indebted to the Philadelphia and Pittsburgh members in many ways, and second, the members from these two cities will necessarily and properly exert a preponderating influence in the management of the state society, even more by unconscious influence than by their votes.

With few exceptions the president or secretary of a county society is the man best fitted to represent his society's interests in the House. The strongest reason of all is the reflex benefit coming to the smaller county societies represented. The member sitting in the House gains an experience and insight that is helpful to his society and his community. The larger the society, the less it needs this reflex influence. Members living in cities have many professional advantages and opportunities that are denied the members living in the country and smaller places. Will the larger county societies or the state society lose on the whole by continuing a plan which has in one form or another allowed the smaller societies for sixty-six years, excepting for the present year, to have a possible voting advantage, an advantage that is more apparent than real?

The late Dr. Guthrie as chairman of the committee considering this matter was enthusiastic regarding the retention of the *ex-officio* representation and volunteered to represent the committee in defending the proposition on the floor at Pittsburgh, notwithstanding the fact that his county society would lose one representative in the House if the plan was retained. Had his health allowed him to be present the report of the committee would probably have been adopted without change.

Members representing both sides of the question given as the heading of this lengthy article have requested the writer to take a hand in the settlement of the matter, and he has written thus openly. From now on he will have nothing to say about the matter, feeling sure that whichever way it is decided the decision will meet with good-natured acceptance and the interests of the profession will be advanced. The question is not of sufficient importance either way to run the risk of any ill feelings, and a courteous discussion free from all personalities is anticipated. It is natural that there should be divergent views about society business and regulations, and each member should grant the other the same liberty of conscience that he asks for himself. If we are to keep Pennsylvania in the front rank as regards Medicine, Surgery and Public Sanitation, we need to remember that "united we stand, divided we fall."

Some of our members need to remember that the Philadelphia County Medical Society members have for nine years contributed to the Medical Defense Fund of the state society without partaking of any of the direct advantages of the fund, as that society has a fund of its own for this purpose. That society, however, has been at liberty to draw on the Medical Defense Fund had it so wished. Had they done so, the amount annually set aside would need to have been considerably larger than it has been. It should also not be forgotten that the members of a very few of the larger societies have gladly and generously shown the members of the other societies numerous favors and courtesies from time to time, while the latter have not been so situated that they could return the courtesies in kind.

S.

MEDICAL EDUCATION IN THE UNITED STATES.

The Journal of the American Medical Association for August 21 was the Educational Number and contained much information concerning medical education and medical schools gathered by the Council on Medical Education.

The JOURNAL here reproduces some of the data given for the year ending June 30, 1915, and directs attention to an editorial entitled Medical Education—A Review of Fifteen Years' Progress.

The total number of medical students (matriculants) in the United States, excluding premedical, special and postgraduate students, was 14,891, a decrease of 1611 below last year, a decrease of 2124 below 1913, a decrease of 3521 below 1912 and a decrease of 13,251 (47.1 per cent.) below 1904, when 28,142, the highest number of students, were enrolled. Of the total number of students, 13,914 were in attendance at the non-sectarian colleges, 736 at the homeopathic and 241 at the eclectic colleges. The attendance at the non-sectarian colleges shows a decrease of 1524 below that of last year, and a decrease of 11,016 (44.2 per cent.) below 1903, when 24,930, the largest number of non-sectarian students, were enrolled. In the homeopathic colleges there was a decrease of 58 below the attendance of last year, and a decrease of 1173 (61.4 per cent.) below 1900, when 1909, the largest number of homeopathic students, were enrolled. The eclectic colleges show a decrease of 29 below the registration of last year, and a decrease of 773 (76.2 per cent.) below 1904, when 1014, the largest number of eclectic students, were enrolled.

The unusual decrease in the number of students this year was due to the enforcement, for the first time by thirty-nine medical colleges, of higher entrance standards—one or two years of preliminary collegiate work.

The total number of graduates was 3536, a decrease of only 58 below 1914, and a decrease of 445 below 1913. The total this year is 2211 (38.8 per cent.) less than in 1904, when 5747, the largest number, were graduated.

The number of graduates from the non-sectarian colleges was 3286, or 84 less than last year, and 393 less than in 1913. It is a decrease of 1904 (36.6 per cent.) below 1904, when 5190, the largest number, were graduated from non-sectarian colleges. From the homeopathic colleges there were 195 graduates, or 41 more than in 1914, and 14 less than in 1913. It is a decrease of 225 (53.6 per cent.) below 1903, when 420, the largest number of homeopathic physicians, were graduated. The eclectic colleges graduated 55, or 15 less than last year, and 38 less than in 1913. It is a decrease of 166 (75.1 per cent.) below 1890, when 221, the largest number of eclectic physicians, were graduated.

Of the 3536 medical graduates, 858, or 24.3 per cent., were reported to hold degrees in arts or science, as compared with 22.5 per cent. last year, 18.9 per cent. in 1913, 17 per cent. in 1912, and 15.3 per cent. in 1910. Of the 858 graduates holding baccalaureate degrees, 131 came from Illinois colleges, 107 from New York, 95 from Maryland, 92 from Massachusetts, and 74 from Pennsylvania.

During the year there were 592 women studying medicine, or 39 less than last year, a decrease of 48 below 1913, and a decrease of 537 (47.6 per cent.) below 1904, when 1129 women students, the largest number, were reported. The percentage of all medical students was 4, or slightly larger than last year. There were 130 women graduates this year, 9 more than last year, or 3.7 per cent. of all graduates. Of all the women matriculants, 116 (19.6 per cent.) were in attendance at the two medical colleges for women, while the remaining 462 (80.4 per cent.) were matriculated in the 53 coeducational colleges. From the two women's colleges, there were 38, or 29.2 per cent., of all women graduates, while 92, or 70.8 per cent., secured their degrees from coeducational colleges.

There are now 95 medical colleges; 83 non-sectarian, 8 homeopathic and 4 eclectic. New York state has ten colleges, Illinois eight, Pennsylvania seven and California six. Chicago has 8; New York, 7; Philadelphia, 6; Boston, 4; San Francisco, 3; St. Louis, 3; Washington, 3, and there are 2 colleges each in Ann Arbor, Baltimore, Cincinnati, Columbus, Iowa City, Los Angeles and Omaha.

The six colleges having the largest enrollments are Jefferson Medical College, 556; Chicago College of Medicine and Surgery, 529; Rush Medical College, 487; Bennett Medical College, 393; Columbia University, College of Physicians and Surgeons, 381, and the University and Bellevue Hospital Medical College, 364. Illinois has the largest number of students, 2213, followed by New York with 2117 and Pennsylvania with 1458.

The following "description of medical colleges" as given for this state will be of interest to our readers.

Pennsylvania, population 8,245,967, has seven medical colleges. Of these, Philadelphia, having a population of 1,687,810 contains six, as follows: University of Pennsylvania School of Medicine, Jefferson Medical College, Hahnemann Medical College and Hospital, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple University Department of Medicine. The other school, the School of Medicine of the University of Pittsburgh, is situated in Pittsburgh, a city of 564,878.

To be eligible for license to practice medicine in Pennsylvania, students matriculating in the session 1914-15 and thereafter, in addition to a four-year high school education must have completed a year's work either in an approved college of liberal arts or in a preliminary year in the medical college, including college courses in physics, chemistry and biology, before beginning the study of medicine. He must also have completed an internship of at least one year in an approved hospital.

PHILADELPHIA.

University of Pennsylvania School of Medicine, Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title, School of Medicine of the University of Pennsylvania was adopted in 1809. It granted the first medical diploma issued in America. The faculty is made up of 49 professors, associate, adjunct and assistant professors, and 122 lecturers, associates, instructors, etc., a total of 171. The minimum requirements for admission are a standard four-year high school course or its equivalent, plus two years of work in an approved College of Arts and Science, including courses in French or German, and in physics, chemistry and general biology or zoology, with appropriate laboratory exercises. The course embraces four years of study of thirty-four weeks each. The total fees for each of the four years are, respectively, $233, $210, $210 and $214. The Dean is Dr. William Pepper. Total registration for 1914-15 was 276; graduates, 57. The one hundred and fiftieth session begins Sept. 24, 1915, and ends June 21, 1916.

Jefferson Medical College, Tenth and Walnut Streets.—Organized in 1825 as the Medical Department of Jefferson College, Canonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 21 professors and 135 lecturers, demonstrators, etc., a total of 156. Entrance requirements are a completed course in a standard secondary school and in addition a preliminary year in a medical college devoted to physics, chemistry and biology, or two years of work in a college of liberal arts including the subjects specified. The course of study covers graded work of four years of eight and a half months each. The tuition is $200 a year, with a matriculation fee of $5, paid but once. The Subdean is Dr. Ross V. Patterson. The total registration for 1914-15 was 556; graduates, 145. The ninety-first session begins Sept. 24, 1915, and ends June 3, 1916.

Medico-Chirurgical College of Philadelphia, Cherry Street, between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 35 professors and 74 lecturers, assistants, etc., a total of 109. Entrance requirements are a completed course in a standard secondary school and in addition a preliminary year devoted to college courses in physics, chemistry and biology. The work embraces four years of eight months each. The fees for each are $180; matriculation fee, paid but once, $5. The dean is Dr. Seneca Egbert. The total registration for 1914-15 was 297; graduates, 82. The thirty-fifth session begins Sept. 24, 1915, and ends June 9, 1916.

Woman's Medical College of Pennsylvania, Twenty-first and N. College Avenue.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 11 professors and 46 assistants, lecturers, etc., in all 57. Entrance requirements are a completed course in a standard secondary school, and in addition *two years* of collegiate work including courses in physics, chemistry and biology. The curriculum covers four years of eight months each. Fees for each of the four years are, respectively, $187, $181, $183 and $179.50. The Dean is Dr. Clara Marshall. The total registration for 1914-15 was 78; graduates, 30. The sixty-sixth session begins Sept. 15, 1915, and ends May 31, 1916.

Hahnemann Medical College and Hospital of Philadelphia, 226 North Broad Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Entrance requirements are a completed course in a standard secondary school and in addition a preliminary year devoted to college courses in physics, chemistry and biology. It has a faculty of 40 professors and 40 lecturers, instructors, etc., in all 80. The work covers four years of eight and a half months each. Total fees for the four years, respectively, are $185, $185, $175 and $175. The Dean is Dr. William A. Pearson. The total registration for the college year 1914-15 was 85; graduates, 22. The sixty-eighth session begins Sept. 27, 1915, and ends June 1, 1916.

The Temple University Department of Medicine, Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 97. The fees for each of the four years, respectively, are $168.50, $167, $151 and $161. The Dean is Dr. Frank C. Hammond. The total registration for 1914-15 was 63; graduates, 24. The fifteenth session begins Sept. 15, 1915, and ends June 5, 1916.

PITTSBURGH.

University of Pittsburgh School of Medicine, Grant Boulevard.—Organized in 1886 as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. The faculty is composed of 41 professors and 53 associates, assistants, etc., 94 in all. Entrance requirements are *two years* of recognized college work to have included essentially courses in chemistry (inorganic and organic), physics, biology and German or French, based on a four-year high school preparation. It is possible for students to get the degree of B.S. and M.D. in six years. The course of study for medicine alone is four years of eight and a half months each. The tuition is $210 a year. The Dean is Dr. Thomas S. Arbuthnot. The total registration for 1914-15 was 103; graduates, 10. The thirtieth session begins Sept. 27, 1915, and ends June 15, 1916.

S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following changes have been reported since the August JOURNAL was printed:-

ADAMS COUNTY: *Death*—D. LeRoy Merriman (Hahnemann Med. Coll., Philadelphia, '94) in Arendtsville, August 15, from uremia, aged 50.

ALLEGHENY COUNTY: *Death* Alexander Morrow Speer (Jefferson Med. Coll., '53) in Pittsburgh, July 19, aged 84. *Removal*—Viola Z. Allison from Tarentum to 7225 Race St., Homewood.

ARMSTRONG COUNTY: *New Member*- Carl H. Robinstein, Ford City.

BERKS COUNTY: *New Member*—William Leiser, 3d, Reading. *Death*—William F. Muhlenburg (Univ. of Pennsylvania, '72) in Reading, August 25, aged 62. *Removal* George S. Deibert from Stoyestown (Somerset Co.) to Spinnerstown (Bucks Co.).

CLARION COUNTY: *New Member* -Harold H. Kahle, Leeper.

CLINTON COUNTY: *Death*—John Kendrick Gilmore (Detroit Coll. of Medicine, '92) in Renovo, August 5, aged 56.

CRAWFORD COUNTY: *New Member*—Frank M. Rumsey, Conneautville. *Death*—William M. Johnson (Med. Coll. of Ohio, Cincinnati, '57) of Meadville, in Saegerstown, June 11, aged 82.

FAYETTE COUNTY: *New Members*—Lowry N. Burchinal, Point Marion; Jeffe L. McCracken, Smithfield; Robert S. McKee, Connellsville.

FRANKLIN COUNTY: *Removals*—William S. Ash from Montreal, Canada, to U. S. Immigration Service, Larned and Griswold Sts., Detroit, Mich.; Charles C. Gans from Chambersburg to East Liverpool, Ohio.

LACKAWANNA COUNTY: *Death*—John O'Malley (Jefferson Med. Coll., '84) in Scranton, August 6, from cholera morbus, aged 58.

LUZERNE COUNTY: *Death*—John Ambrose Kenny (Univ. of Pennsylvania, '09) in Wilkes-Barre, August 9, aged 40.

MIFFLIN COUNTY: *New Members*—William M. Baker, Lewistown; Charles M. Johnson, Richard M. Johnson, McVeytown.

PHILADELPHIA COUNTY: *Death*—John Bacon (Univ. of Pennsylvania, '89) in Torresdale, Philadelphia, August 2, aged 50. *Removal*—S. Finley Gordon from Philadelphia to State Hospital, Warren (Warren Co.).

SCHUYLKILL COUNTY: *New Member*—Elvin William Keith, Minersville.

SUSQUEHANNA COUNTY: *Death*—Calvin C. Halsey (Castleton Med. Coll., Vermont, '50) in Montrose, August 21, aged 92.

UNION COUNTY: *New Member* Harry Thornton, Allenwood.

VENANGO COUNTY: *New Member*—Frank B. Jackson, Oil City.

WASHINGTON COUNTY: *New Member*—Louis F. Kirchner, Washington. S.

STATE NEWS ITEMS.

MARRIED.

Dr. Walter H. Brubaker, Lebanon, and Miss Mattie Bomberger, Annville, September 2.

DIED.

Dr. J. Kinnier Crawford (Jefferson Med. Coll., '94) in Philadelphia, August 1, from uremia, aged 48.

Dr. Thomas Lyon Hazzard (Univ. of Pennsylvania, '81) in Pittsburgh, July 29, from heart disease, aged 60.

Dr. Samuel Harvey Wollerton (Univ. of Pennsylvania, '80) in Scranton, July 26, from pneumonia, aged 55.

Dr. William Alfred McCaslin (Univ. of Mich., Ann Arbor, '74) in Homestead, August 15, from cerebral hemorrhage, aged 66.

Dr. Sylvester Bachman Weaver (Hahnemann Med. Coll., Philadelphia, '72) in Littlestown, August 20, from valvular heart disease, aged 67.

Dr. David B. Umstead (Hahnemann Med. Coll., Philadelphia, '78) of Tacony, Philadelphia, at his summer home in Wildwood N. J., July 25, from heart disease, aged 58.

Dr. John Jacob Bissitt (College of Physicians and Surgeons in the City of New York, '80) of Coraopolis, in Bridgeport, Conn., July 20, from cerebral hemorrhage, aged 79.

ITEMS.

Dr. George W. McNeil has been appointed postmaster of Pittsburgh.

Pittston experienced an epidemic of typhoid fever last month, twenty cases being reported in a few days.

Dr. Lovisa I. Blair, Wilkes-Barre, has been appointed as one of the medical inspectors of the city schools.

Dr. John A. Kolmer, Philadelphia, received the honorary degree of Master of Science from Villanova College, June 17.

Dr. O. J. Snyder, Philadelphia, was on September 1, reappointed a member of the State Osteopathic Examining Board.

The Woman's Medical College, **Philadelphia**, receives by the will of the late Anna Yarnall of Philadelphia, a residuary bequest of $5000.

Dr. E. Oliva White, Philadelphia, sailed from San Francisco for Hawaii, September 1, to make a study of leprosy in the leper colony at Molokai.

Tuberculosis in Pennsylvania. Nearly 1000 persons died in May, according to the monthly report of the Bureau of Vital Statistics. Of this number 857 died of tuberculosis of the lungs, and 130 of tuberculosis of other organs.

Dr. R. Tait McKenzie, Philadelphia, has been appointed captain of the medical corps of the British army, and has been given charge of the physical examination of recruits at the Aldershot military training camp.

Dr. Calvin C. Halsey whose death is noticed in Changes to Membership was the oldest living Odd Fellow in the state. He graduated from Williams College in 1844, and was a vice-president of the Medical Society of the State of Pennsylvania in 1885.

The Misericordia Hospital, an institution to be erected at Fifty-fourth St. and Cedar Ave., Philadelphia, for the Sisters of Mercy, was recently granted a charter by the Court of Common Pleas.

For the purpose of building this institution, a fund of $200,000 was raised in a campaign.

Drug Users to be Registered. All known users of a narcotic drug must be registered at once. Since the Harrison Act went into effect, the consumption of narcotics has increased greatly, but the drug habit has not been controlled and this step is taken as an indication that the United States government is determined to eliminate the use of harmful drugs.

Appointments for Child Hygiene Work. Eleven nurses, at a salary of $900 each, have been appointed by Director Ziegler of the Bureau of Health and Charities, to make up the full complement of the reorganized division of the Bureau of Child Hygiene of the bureau. The nurses will act, at present, as district visiting nurses under the supervision of Dr. Ziegler.

Typhoid in Danville Hospital for Insane. The State Health Department has been called upon to aid in stamping out an epidemic in the hospital. The water has been declared to be bacteriologically pure and the milk and butter supply conditions are said to be ideal. It is believed that there is a typhoid carrier in the institution and a careful investigation is being made.

Postgraduate Clinics. Beginning with October 1, Dr. Robert N. Willson will continue his Friday afternoon postgraduate lectures on the heart. These lectures will be given from 5 to 6 o'clock in the amphitheater of the Philadelphia General Hospital. There are no fees nor obligations connected with attendance on the course and all physicians and medical students are cordially invited to be present. The lectures will continue every Friday afternoon until April 28, 1916.

New Law Fills Philadelphia Schools. Enforcements of the new compulsory education law passed by the last session of the legislature, with regard to children between 14 and 16 years holding working certificates, may make it necessary for 12,000 of these workers to return to full time in the school room. The new law requires after January 1, 1916, that all children must have completed the sixth grade before leaving school. It is said the Board of Education will recall all of the 20,000 working certificates now held by children under 16 years.

The American Association for Study and Prevention of Infant Mortality. The sixth annual meeting will be held in Philadelphia, November 10-12, 1915. The subjects to be discussed include Eugenics; Effect of the Economic Standing of the Family on Infant Mortality; Infant Welfare Nursing in Small Cities, Towns and Rural Districts: Institutional Mortality; Midwifery Conditions, and Treatment and Prevention of Respiratory Diseases. Mr. Homer Folks of New York is president; Dr. S. McC. Hamill of Philadelphia, president elect; Dr. Joseph S. Neff of Philadelphia, chairman of the committee on local arrangements. Programs or other information can be secured from the secretary, Miss Gertrude B. Knipp, 1211 Cathedral Street, Baltimore, Md. The session on Economic Aspects of Infant Welfare will be a joint one with the Philadelphia Medical Society and will be held at the College of Physicians, at 8:15 P.M., November 11.

Campaign Against Mosquitoes. Since the recent rains the mosquito brigade of Chief Connell of the highway bureau has treated more than 353,000 square feet of standing water with oil, filled approximately 300 pools and made 50 miles of ditches to drain marshes where the pests breed. The men have been instructed to cut down the weeds on vacant lots. Fifty employees of the Bureau of Highways went to work on August 20 to clear the mosquitoes of the swamps near League Island. The marshland is owned by Philadelphia and the work of clearing was begun after an investigation by a body of residents of West Philadelphia. The work is being carried on along the Government Avenue east of Broad Street and at the Curtin Street canal. Only $3500 was appropriated this year and those who have investigated the matter declare that $50,000 is needed to wage a warfare which should be begun in January when the marsh lands are frozen and can be cleared and trenched with little difficulty.

Medical Men Pass Army Examinations. Thirty-nine of the medical officers of the National Guard have been reported to Adjutant General Thomas J. Stewart as passing the medical examinations under the course prescribed by Major Louis T. Hess, U. S. A. The ratings above ninety were: Majors—William E. Keller, Scranton; Benedict S. Ralston, Pittsburgh; J. Markwood Peters, Harrisburg; Charles S. Turnbull, Henry H. Doan, Bristol; William C. Hogan, Bradford; Frederick O. Waage, Philadelphia; Robert S. McKee, Connellsville. Captains—Edward M. Iland, Coraopolis. First Lieutenants—E. D. S. Mullison, Phoenixville; Joseph A. Wagner, Scranton; Fred B. Shaffer, Somerset; Scott M. Huff, Bellefonte; Raymond A. Thompson, Butler; Lawrence M. Thompson, Dorrancetown; John L. Miller, Aliquippa; Charles H. Furnee, Kittanning; William C. LeCompte, Bristol; Edward W. Bixby, Wilkes-Barre. Lieutenant Bixby led with 96.67, with Major Ralston leading the majors with 96.58.

Dr. Joseph C. Doane, chief resident physician of the Philadelphia General Hospital, reviews 153 cases of habitual users of drugs, with a special reference to the method of acquiring the habit. He gives the cause of eighty-six cases as association. In nearly every instance, these people were present where the drug was being used and were invited by friends to try it 'and see how it makes you feel,' in some instances the patients were invited by friends to use the drug to relieve effects of an alcoholic debauch; in others some imagined ill or pain, and in all these cases, however, the habit was started on the invitation of friends or by curiosity, through seeing others use it. Of the fourteen cases acquired from doctors' prescriptions, some of these have undergone operations, others were victims of chronic pain, which at one time has been relieved by doctors with the drug. Of the twenty-three cases in which smoking opium was given, association was really the starting point, upon the invitation of friends or from curiosity.

Association	86
Doctor's prescription	14
Smoking opium	23
Other drugs, mainly cocain	4
To keep awake	2
To cause sleep or quiet nerves	17
Not stated	7
Total	153

GENERAL NEWS ITEMS.

Dr. James L. Wheaton died in Pawtucket, R. I., August 12, aged 92.

Dr. Paul Ehrlich died in Berlin August 20, of heart disease, aged 61.

Edmund Owen, M.B., F.R.C.S., LL.D., D.Sc., anatomist and surgeon, died of cerebral hemorrhage in London, July 23, aged 68.

Dr. Deborah Smith Drury died in Haverhill, Mass., August 23, in her ninety-second year.

The American Medical Editor's Association will hold its annual meeting at the McAlpin Hotel, New York City, October 18-19, under presidency of Dr. H. Edwin Lewis.

The Municipal School of Midwifery, Chicago, was founded August 7, and will have its headquarters in the Iroquois Memorial Hospital. A faculty of competent physicians will instruct the midwives, whom it is hoped the health authorities will be able to induce to take the instruction.

Dr. Rupert Blue, Surgeon General, U. S. Public Health Service, has been awarded the American Medicine Gold Medal, as being in the judgment of the trustees, the American physician who has performed the most conspicuous and noteworthy service in the domain of medicine and surgery during the past year.

"The American Supply Company in Cincinnati," which is unknown in Cincinnati, has been represented in Michigan and other places by a man giving his name as Dr. C. A. Lewis. He collects $7.50 and says that a catalog will be along in a few days, but it does not come. (See cartoon in our advertising columns).

The American Electrotherapeutic Association will hold its twenty-fifth annual meeting at Atlantic City, N. J., September 14, 15 and 16, with headquarters at the Hotel Chalfonte, under the presidency of Dr. John W. Torbett of Marlin, Texas. All physicians interested in physiotherapy are invited to attend.

The Academy of Medicine, Edmonton, a city of 25,000 in Alberta, has adopted the following resolution: That the Academy of Medicine of the City of Edmonton, Alta., go on record as being in favor of prohibition in the Province of Alberta and endorse the proposed liquor act for the suppression of the liquor traffic in Alberta.

The Kentucky State Medical Association will be in session at Louisville, September 21-23. The *Kentucky Medical Journal* for this month gives the reports, the financial reports being very full and complete. The membership is 2016. The following salaries are noted: Secretary, $1500; secretary's stenographer, $900; business manager of the *Journal*, $480. Medical Defense during the year cost $2074.80. The per capita assessment is three dollars.

Dr. Charles John Finlay (Jefferson Med, Coll., '65) died at his home in Havana, Cuba, August 20, aged 81. Dr. Finlay seems to have been the first to suggest the theory of the propagation of yellow fever by means of the mosquito. On August 14, 1881, before the Royal Academy of Medicine, Havana, he promulgated his theory that some insect was the means whereby yellow fever was conveyed from person to person, and he published an article in support of this theory in the *American Journal of the Medical Sciences*, October, 1886.

Fumigation Abandoned in Brooklyn. On December of 1914 the practice of fumigation of premises after the occurrence of infectious disease was discontinued excepting in Brooklyn where it was continued as a control measure. The results of this experiment have now been made public. In the Borough of Manhattan 193 later cases occurred among 3451 primary cases of diphtheria. Of these 171, 4.9 per cent. would not have been affected by fumigation, and 22, 0.6 per cent., might have been so affected. In Brooklyn where fumigation was performed, there were 138 later cases among 2907 original cases. Of these 110, or 3.8, would not have been affected by fumigation, and 28, or 0,9 per cent., might have been so affected. Thus there were half again as many later cases in Brooklyn where fumigation was practiced as in Manhattan where it was not done. Fumigation will now be abandoned in Brooklyn as well as in the other boroughs of the city and in its place emphasis will be laid on thorough cleaning, opening up to fresh air and sunshine, and renovation by painting, papering and kalsomining.

Aid to the Belgian Physicians and Surgeons. Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession, up to and including the week ending August 28, 1915.

Contributions:—	
Previously reported,	$7779.84
Less error (crediting Dr. D. W. Dowd's contribution twice)	25.00
	$7754.84
Dr. W. L. Keller, Hot Springs, Mo.,	5.00
Dr. E. C. Ellett, Memphis, Tenn.,	10.00
Dr. David W. Cheever, Boston, Mass.,	20.00
Dr. G. N. Kreider, Springfield, Ill.,	5.00
Dr. Hugh A. Cuthbertson, Chicago, Ill.,	10.00
Warren County Medical Association, Vicksburg, Miss.,	10.00
Total receipts,	$7814.84
Previously reported disbursements,	7310.04
Balance,	$504.80

F. F. Simpson, M.D., Treasurer,
7048 Jenkins Arcade Bldg., Pittsburgh.

The Medical Society of New Jersey, the oldest medical society in the United States, held its 149th annual meeting at Spring Lake, June 22-24, and the *Journal of the Medical Society of New Jersey* for September contains the full minutes of that meeting. The membership was 1649. The per capita assessment is three dollars. The salary of the recording secretary was fixed at $500, and that of the editor as $1200 "for salary and expenses." Arrangements were authorized for the proper celebration of the 150th anniversary next June. It was decided to refuse for its journal all advertisements which do not conform with the rules of the Council on Pharmacy and Chemistry of the A. M. A., and the front cover of the September issue contains the following:

NOTICE!

Congratulate us as we felicitate you

The

Subscribers and Advertisers of this Journal

Why Us?

We have consummated a great step for progress, honesty and truth. With this issue of the *Journal of the Medical Society of New Jersey* we have removed all objectionable advertising and will not, in the future, print the advertisement of any individual product not sanctioned by the Council on Pharmacy and Chemistry of the American Medical Association; and our other advertising matter will receive the same careful scrutiny that the Editor gives the scientific and news pages.

Why You?

Our subscribers can now feel that the wares or facilities offered in our advertising pages are bona fide and carefully selected, and that they are in duty bound to patronize our advertisers.

Our advertisers will appreciate that they will be in fit company and that these pages now being read will repay them. *Publication Committee.*

The Second International Conference on Race Betterment, was held at San Francisco, California, August 4-8, and was attended by a large number of men and women of scientific achievement. The Conference discussed race decadence, the possibilities of race improvement, and the agencies of race betterment. Luther Burbank, the plant wizard, discussed "Evolution and Variation with the Fundamental Significance of Sex." Mr. Burbank said: "Abundant, well balanced nourishment and thorough culture of plants or animals will always produce good results in holding any species or variety up to its best hereditary possibilities, beyond which it can not carry them, and lacking which, maximum development can never be realized. But a sharp line must always be drawn between the transient results, temporarily attained through favorable environment, and the permanent results of selection of the best individuals for continuing the race. Only by constant selection of the best can any race ever be improved."

Paul B. Popenoe, editor of the *American Journal of Heredity*, in discussing "The Natural Selection of Man" declared: "There are only two ways to improve the germinal character of the race, to better it in a fundamental and enduring manner. One is to kill off the weaklings born in each generation. That is Nature's way, the old method of natural selection which we are all agreed must be supplanted. When we abandon that, we have but one conceivable alternative, and that is to adopt some means by which fewer weaklings will be born in each generation. The only hope for permanent race betterment under social control is to substitute a selective birth-rate for Nature's death-rate. That means eugenics."

Dr. J. H. Kellogg, superintendent of the Battle Creek Sanitarium, proposed that the Conference institute a eugenics register which would undertake to register two classes of persons: "First, those who, on examination in relation to personal characteristics and family pedigree, are found to measure up to eugenic standards. Second, the children born of parents whose pedigree and physical characteristics conform to the required standards. Such a registry would be the beginning of a new and glorified human race which sometime, far down in the future will have so mastered the forces of nature that disease and degeneracy will have been eliminated. Hospitals and prisons will be no longer needed, and the golden age will have been restored as the crowning result of human achievement and obedience to biologic law."

Office of Information, U. S. Dept. of Agriculture. Canning Compounds Dangerous to Health. Information has come to the Department that the canning season has brought the usual demand on the part of housewives for salicylic acid and boric acid. These preparations are sometimes sold in the form of powder under various trade names and are recommended by the promoters for use in preserving canned goods in home canning. In the directions for use the housewife is told to fill the jar with the fruit or vegetables, cover with water, and add a teaspoonful of the preserving powder. While it is true that these compounds may retard the decay of the fruit or vegetable, it is pointed out by the experts of the Department that their use may be attended by serious disturbances of health. Salicylic acid is well known as a poisonous substance, and one of the evils which may accompany its use is derangement of the digestion. It is therefore plain that its extensive use in food may lead to disturbance of digestion and health.

The Federal Food and Drugs Act prohibits the use of harmful preservatives in foods that enter interstate commerce. The food law of nearly every state in the union forbids the sale within the state of foods that have been preserved with harmful substances. Neither the Federal or State food laws apply to foods that are canned in the home and consumed there. It would seem, however, that the housewife would not knowingly use, in the foods she provides for her family, substances that she could not use in foods for sale without violating the law, because these substances are injurious to health.

Fruits and vegetables can be kept indefinitely if they are sterilized by heat and properly sealed, and there is no excuse, in the opinion of the experts of the Department, for running any risk by using preserving powders, which may be injurious to health. The use of such powders in addition to the possible injury to health encourages uncleanly or careless work in canning. Reliance is placed in the efficacy of the preserving compound instead of upon cleanliness and heat.

The Department has issued bulletins that give specific directions for the preserving and canning of fruits and vegetables without the use of preserving powders or canning compounds. These bulletins may be obtained without cost from the Department of Agriculture. Application should be made for Farmers' Bulletin, No. 203 on Canned Fruit, Preserves, and Jellies, and No. 521 on Canning Tomatoes at Home and in Club Work. Also forms N. R. 22, N. R. 23, N.R. 24, N.R. 34 and N.R. 37 of the Office of Extension Work, North and West, States Relations Service.

COMMUNICATION.

CONSERVATION OF VISION.

To the Editor: In the August number of the Pennsylvania Medical Journal you reproduce one of the publications of the National Committee for the Prevention of Blindness, the one in question being entitled "What Women's Clubs and Nursing Organizations Can Do to Prevent Blindness." In this publication reference is made to ophthalmia neonatorum, the inefficiency of midwives, the eyesight of school children, industrial accidents and the danger of wood alcohol. Finally at the bottom of page 885, the National Committee for the Prevention of Blindness makes an appeal for help, and urges, "at least one big popular meeting annually under the joint auspices of the local medical society, the health officer, superintendent of schools, Y.M.C.A., women's clubs, nursing organizations, and relief agencies." Mention is made that it has data and information, lantern slides, exhibits, etc., etc., which it is glad to share with workers in all parts of the country.

It may be of interest to note that all this propaganda work has been under way in this state and under the auspices of the state medical society for three years past. Three years ago while I was chairman of the Section on Eye, Ear, Nose and Throat Diseases of the state society, we devoted a whole afternoon at the Scranton Session to all the above varied topics and more. That meeting issued in the formation of a Commission on the Conservation of Vision of the Medical Society of the State of Pennsylvania, which has gone steadily forward in the very work alluded to by the National Committee for the Prevention of Blindness. Dr. William Campbell Posey was for two years chairman of the Commission on the Conservation of Vision acting under the state medical society, and accomplished many noteworthy things. As chairman for Pennsylvania he became a member of the National Committee for the Conservation of Vision acting for the American Medical Association. Please note carefully that this committee I have just mentioned is the official one of the American Medical Association and entirely distinct from the National Committee for the Prevention of Blindness, which is made up almost entirely of lay persons. The American Medical Association's National Committee is made up almost entirely of medical men and is striving to organize their work by states all over the country. From the beginning Dr. Samuel Dixon, our wonderful health commissioner in this state, has been the honorary chairman of the Commission on the Conservation of Vision of our state society. Under the School Code he has instituted all over the state and especially in the rural districts, thorough examination of the eyes and ears of all school children, numbering hundreds of thousands. Midwives are now licensed by the state and are being instructed as to the care needed in handling newborn babies' eyes. The trachoma situation is being thoroughly studied by the State Health Department.

Industrial accidents to the eyes are being carefully investigated under John Price Jackson, our able commissioner of labor. The lighting and ventilation of the schools has been taken up by the commission and a course of lectures is being organized. Fully a dozen lectures were given during the first half of this year illustrated by lantern slides furnished by the state society's commission. In all this we are working with the National Committee on the Conservation of Vision of the American Medical Association.

I feel that the members of the state society are entitled to know of this work that is being done by its regularly organized commission which is acting in concert with the State Health Department and the National Committee of the American Medical Association. The fact that the State Health Department of Pennsylvania was awarded the Grand Prize at the Panama Pacific Exposition, and that prominently featured in its exhibit was school hygiene, attests sufficiently to the activity of our State Health Department in all matters pertaining to the conservation of vision.

I am far from wishing to disparage the efforts of the National Committee for the Prevention of Blindness. It is an independent organization that is doing good work but it would seem that it is needed in states where the medical organizations have not as yet taken up the burden. I had hoped that the National Committee for the Prevention of Blindness would affiliate with the National Committee on the Conservation of Vision of the American Medical Association.

With the work being rapidly organized as it is in this state under the proper medical authorities it is most desirable that every medical man in the state should be ready to coöperate with the established forces already operative within the state. In this I feel every member of the commission in this state, including the honorary chairman, will support me. This commission consists of Drs. Samuel G. Dixon, Honorary Chairman, T. B. Holloway, Secretary, W. W. Blair, C. P. Franklin, C. M. Harris, E. B. Heckel, Edward Stieren, J. F. Klinedinst, William Zentmayer, and

Sincerely yours,
Wendell Reber, Chairman.

Philadelphia, August 30, 1915.

BOOKS RECEIVED.

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Publications from the Jefferson Medical College and Hospital. Volume IV. Philadelphia, 1915.

Collected Papers from the Research Laboratory, Parke, Davis and Company, Detroit, Mich. Dr. E. M. Houghton, Director. Volume III. 1915.

Fractures and Dislocations. Diagnosis and treatment. By Miller E. Preston, A.B., M.D., First Lieutenant, M.R.C., U.S.A.; Surgical Examiner, Colorado State Board of Medical Examiners, Denver, Col. With a chapter on Roentgenology, by H. G. Stover, M.D., Professor of Roentgenology, School of Medicine, University of Colorado; Visiting Roentgenologist to City and County Hospital, St. Joseph's Hospital and Children's Hospital, Denver, Col. 860 illustrations. St. Louis: C. V. Mosby Company. 1915. Price $6.50.

Flies and Diarrheal Disease. Publication No. 91, New York Association for Improving the Condition of the Poor. The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor has issued a special publication entitled, "Flies and Diarrheal Disease," descriptive of its three months' study in the homes of over a thousand infants in New York City on the relation of flies and diarrheal disease. Special attention has been given such influencing factors as dirt and artificial feeding, and their relative importance determined. A full description of the study with its important conclusions may be obtained by request from Philip S. Platt, Superintendent of the Bureau, 105 East 22d St., New York, N. Y.

First Annual Report of the Commissioner of Labor and Industry, of the Commonwealth of Pennsylvania, 1913-1914. Part II. Accidents, Inspections, Hygiene and Engineering, Industrial Board Standards, Mediation and Arbitration and Legal Procedure. Harrisburg: William Stanley Ray, State Printer, 1915.

The Prevention and Treatment of Infections. By Oliver T. Osborne, A.M., M.D., Professor of Therapeutics and formerly Professor of Clinical Medicine in Yale Medical School; Member of Council on Pharmacy and Chemistry, New Haven, Conn. *The Journal of the American Medical Association*, 535 North Dearborn St., Chicago, Ill.

Simplified Infant Feeding. With seventy-five illustrative cases. By Roger H. Bennett, B.S., M. D., Adjunct Professor of Diseases of Children, New York Postgraduate Medical School; Attending Physician of the Children's Department, New York Postgraduate Hospital; Assistant Attending Physician at the Willard Parker Hospital and the Red Cross Hospital, New York. With 14 illustrations. Philadelphia and London: J. B. Lippincott Company. Price, $3.00.

The Medical Clinics of Chicago. Volume I. Number 1. (July, 1915). Octavo of 208 pages, 37 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year, Paper, $8.00; Cloth, $12.00.

PROPAGANDA FOR REFORM.

Radio-Rem. The radio-rem outfit is advertised by Schieffelin and Co. It is said to produce water charged with radium emanation by inserting rods stated to be coated wth radium sulphate in water. Not only is the internal use of radium emanation without proved value, but the amount of emanation said to be produced by the apparatus is far below the amounts generally used by those who believe in its efficacy. It is claimed that this outfit supplies a substitute for natural mineral water; but there is no proof that the value of mineral waters depend on contained radium emanation (*Jour. A. M. A.*, Jan. 30, 1915, p. 456).

Phytin and Fortossan. Phytin, sold by A. Klipstein and Co., New York, is an organic phosphorus compound, the acid calcium-magnesium salt of phytinic acid. The Council on Pharmacy and Chemistry rejected phytin because unwarranted and exaggerated therapeutic claims were made for this product, based on the entirely undemonstrated assumption that phosphorus is assimilated only from organic combination, that a long list of diseases are due to deranged phosphorus metabolism and that such diseases are benefited or cured by phytin. The Council also refused recognition to fortossan, a preparation of phytin and sugar of milk (*Jour. A. M. A.*, Jan. 30, 1915, p. 456).

Venarsen. Venarsen, marketed by the Intravenous Products Co. for the treatment of syphilis, pellagra, tuberculosis, anemia, etc., is a secret preparation. One circular suggests that venarsen is a sort of an improved salvarsan, but in reality it gives no clew whatever as to the real character of the preparation. Another circular suggests that venarsen is a shot-gun combination containing arsenic, mercury and other anti-syphilitic drugs. It is not only the right but the duty of physicians to know the essential composition of what they prescribe; a physician who uses a remedy the composition of which is kept secret, even in part, is not doing his duty to his profession nor to his patient. It is almost criminal for physicians to use a preparation of secret composition and to administer it by intravenous injection, a method which in itself is altogether likely to give rise to accidents (*Mo. State Med. Jour.*, Jan., 1915).

Cod Liver Oil *versus* Milk, Butter and Eggs. Like other fats, cod liver oil is readily digested and utilized in the body. Its disagreeable taste has largely outweighed its availability as a nutrient. Recent experiments have established that the peculiar growth-promoting qualities of cod liver oil are likewise possessed by butter and egg-yolk fat. There seems to be no reason, therefore, to administer the unpalatable cod liver oil (*Jour. A. M. A.*, Feb. 20, 1915, p. 667).

Celerina, Aletris Cordial and Kennedy's Pinus Canadensis, Light and Dark. As glaring instances of nostrums exploited to physicians on unscientific claims and false representations, the Council on Pharmacy and Chemistry has prepared reports on the above products of the Rio Chemical Company. In addition to 42 per cent. of alcohol Celerina is stated to contain kola, viburnum, celery, cypripedium, xanthoxylum and aromatics. There is no ingredient in Celerina except the alcohol, that has any recognizable activity and the alcohol content is nearly as great as that of whisky. The sooner it is realized that this preparation is essentially nothing but alcohol and bitters exploited under a fancy name, the better for the science of medicine and the public health. In addition to 28 per cent. of alcohol, Aletris Cordial is stated to contain aletris, helonias and scrophularia. These drugs have been discarded as valueless by modern scientific medicine. In Aletris Cordial there is no ingredient capable of producing any other effect than the alcohol stimulation and such psychic effect as may be due to the bitter taste. Yet physicians are asked to believe that "probably no remedy is so uniformly successful in the prevention of threatened miscarriage as Aletris Cordial Rio." Alcohol being the essential constituent of Aletris Cordial and the amount being high enough to promote the formation of the alcohol habit, the recommendation to administer it during pregnancy and to young girls is dangerous and an outrage. Kennedy's Pinus Canadensis, Dark, recently renamed "Darpin" and Kennedy's Pinus Canadensis, Light, recently renamed "Abican" are of interest chiefly because of the unwarranted claims which are made for them. The "dark" preparation appears to be some sort of a tannin-bearing extract. The "light" preparation appears to be a sulphate of zinc-alum injection. It is devoid of tannin and is not an extract of pinus canadensis as claimed. A discussion of the claims made for these preparations is superfluous. It is enough to mention that they are recommended in such diseases as albuminuria, fetid perspiration, gonorrhea, uterine hemorrhage and leukorrhea (*Jour. A. M. A.*, Feb. 13, 1915, p. 606).

Tri-Iodides, Three Chlorides and Maizo-Lithium. As an illustration of unreliability of claims and unscientific character of proprietary mixtures the Council on Pharmacy and Chemistry published reports on the above named products of the Henry Pharmacal Company (J. F. Ballard, proprietor). The A. M. A. Chemical Laboratory reported to the Council that contradictory and false claims were made in regard to the composition of Tri-Iodides (Henry). The Council held that Tri-Iodides conflicted with its rules in that the composition was incorrectly stated, because it was advertised indirectly to the public, because unwarranted therapeutic claims were made for it, because the name did not indicate the potent ingredients and because the mixture was unscientific. Three Chlorides was claimed to contain mercuric chlorid, arsenic chlorid and ferrous chlorid (protochlorid of iron). The A. M. A. Chemical Laboratory reported to the Council that, while the advertising matter laid much stress on the superiority of the protochlorid of iron which was stated to be present, the iron was not in the ferrous but in the ferric condition. The Council held Three Chlorides in conflict with its rules in that its composition was not correctly stated, in that it was advertised indirectly to the public for the treatment of diseases with the likelihood of doing harm, in that exaggerated and unwarranted therapeutic claims were made for the preparation, in that the name of this mixture did not indicate the presence of its potent constituents, iron, mercury and arsenic, and in that the routine administration of mercury and arsenic with iron in fixed combination is irrational. Maizo-Lithium is one of the many proprietary lithium preparations based on the disproved theory that lithium dissolves uric acid deposits in the body. While claimed to contain "maizenate of lithium" the association's chemists reported to the Council that they questioned the existence of such a compound, that the manufacturer had failed to submit evidence of its presence in his preparations and that chemical analysis indicated the presence of lithium citrate, instead. The Council held Maizo-Lithium in conflict with its rules in that its composition was not disclosed, in that it was advertised indirectly to the public and in that unwarranted therapeutic claims were made for it (*Jour. A. M. A.*, Feb. 5, 1915, p. 528).

Purity of Ether and Postanesthetic Glycosuria. Animal experiments by Ross and Hawk show that postanesthetic glycosuria is not due to impurities as has been claimed, but is brought about by a carbohydrate free diet prior to the anesthesia. Those who claim that the U. S. P. tests for the purity of ether are insufficient, should present better evidence than they have so far done (*Jour. A. M. A.*, Feb. 20, 1915, p. 668).

Peebles Epilepsy Cure. The Dr. Peebles Institute of Health, Ltd., Battle Creek, Mich., advertises an "epilepsy cure." The "treatment" was examined in the A. M. A. Chemical Laboratory. It consisted of two bottles, "No. 1" and "No. 2." "No. 1" was a liquid containing extractive matter, had an odor resembling celery and valerian and contained 11.40 per cent. absolute alcohol. "No. 2" was a liquid, having a valerian-like odor and containing as essential constituents ammonium bromid and potassium bromid, equivalent to 16.8 grains potassium bromid per fluidram, the recommended dose. Thus, the treatment consists essentially of bromids and is, in no sense, a cure and not free from danger (*Jour. A. M. A.*, Jan. 30, 1915, p. 455).

Cod Liver Oil Cordials. To determine if the growth-promoting principle of cod liver oil is contained in the oilless cod liver oil preparations on the market, feeding experiments have been made with some of these preparations by J. P. Street of the Connecticut Experiment Station. In these experiments it was found that the normal nutrition and growth of rats was not maintained when the fat of a standard ration was replaced by a representative amount of Hagee's Cordial of the Extract of Cod Liver Oil Compound, Vinol, Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver and Waterbury's Compound, Plain. When, then, these animals were placed on a ration containing an equivalent amount of cod liver oil, normal nutrition and growth was soon established (*Jour. A. M. A.*, Feb. 20, 1915, p. 638).

SOCIETY.

WILLS HOSPITAL OPHTHALMIC SOCIETY.

Meeting of March 2, 1915. Dr. P. N. K. Schwenk, Chairman.

Dislocation of Lens. Dr. Zentmayer exhibited a case of dislocation of the lens into anterior chamber successfully treated after the method of Ewing. The patient was a man about thirty years of age. The lens had been dislocated for years. Symptoms of acute secondary glaucoma set in two days before the operation. The pain was so severe that it caused the patient to swoon and to vomit repeatedly. The lens, which was translucent, was entirely within the anterior chamber, except for a short arc of its equator which was behind the upper narrow iris circle. Under ether, a broad keratome was entered. At the sclerocorneal margin at the lower outer quadrant the blade was pushed between the posterior surface of the nucleus and the posterior capsule of the lens. The keratome was then slowly withdrawn while pressure was made upon the cornea. The nucleus immediately slid along the blade and out through the wound. The cortical matter was then washed out and the capsule dragged out. No vitreous was lost. The patient made an immediate recovery.

Traumatic Cataract. Dr. Zentmayer exhibited a case in a man about thirty years of age, in which he had extracted the lens after the method of simple extraction of the senile lens. An excellent visual and cosmetic result had been secured.

Etiology of Cataract. Dr. S. D. Risley, in a symposium on cataract, said that the operation for the extraction of the opaque lens must be regarded as a capital operation in ophthalmic surgery. While the signal importance of a correct technic could not be overestimated, the choice of procedure and the technic must, in the final analysis, hinge largely upon the variety of the cataract and the operator's concept of the etiology of opacity of the lens. The day is long past when the ophthalmic surgeon regarded the opaque lens as a necessary concomitant of old age. While it is true that the majority of cataracts occur in people after middle life, it should be remembered that it is nevertheless an exceptional occurrence; that the vast majority of even the very aged are spared this misfortune; that, therefore, some reason must be sought for its presence in these exceptional cases. The etiologic factors are, on the one hand, purely local and to be found in the irritative and pathologic changes set up in the uveal tract, resulting from a life-long strain upon the eyes in the struggle to overcome the errors of refraction and abnormalities of binocular balance, and usually accompanied by the phenomena of asthenopia.

On the other hand, it should be borne in mind that the opacity of the lens, barring the soft cataracts of early life, occur at an age when the organism is beginning to manifest the wear and tear of life in general impairment of function; when the physician and surgeon anticipate the presence of cardiovascular disease, faulty digestion, constipation, toxemias, infections, disease of the joints, affections of the liver and kidneys, high blood pressure, and impaired glandular function. Reasoning, *a priori*, there is probably no organ of the body more prone to participation in these general disorders than the pigmented, highly vascular uveal tract of the eye, and the correctness of this reasoning finds ample corroboration in the daily clinical experience of the ophthalmic surgeon. Since the nutrition of the eye is so largely dependent upon the avascular choroidal tract it is to be anticipated that the vascular structures in the eye, especially the lens and vitreous body, will be the first to suffer injury from any impairment of the nutrition of the globe due to uveal disease. In 186 cases of incipient and immature cataract studied with this in mind, 72 per cent. showed evidence of vitreous degeneration by the presence of infiltrates and webs floating in a more or less fluid vitreous and accompanied by ophthalmoscopic evidence of uveal disease, and in a large percentage a history of more or less prolonged asthenopia. The opacity of the lens is therefore to be regarded as a sequel of uveal disorder and in its general management treated as such.

Complications during and after Cataract Extraction. Dr. Zentmayer dealt with them in the order in which they might occur in the operation. He said that some of the complications are due either to the carelessness of the operator or to individual conditions local and general, and are often forecasted by these peculiarities. He considered too small a corneal section as one of the most serious of all complications. Loss of vitreous, while always to be avoided, is not serious if moderate in amount. He believed that efforts to improve matters by operative interference often lead to a further loss, and it is frequently wise, after sweeping a spatula up under the lid, and after the speculum has been removed, to bandage the eye, without attempting a toilet of the wound. Delayed closure of the wound need give little concern, being best met by removing all dressings and applying narrow strips of isinglass plaster across the lids to hold them quiet. A protective mask should also be worn. If this fail to bring about closure, a careful search of the wound must be made for capsular and cortical shreds. A filtration of the aqueous will give rise to the appearance of a leaking wound.

Dr. Chance said that so clear an exposition of such chapters on cataract as had been presented deserved the thanks of all present; and he, for one, wished to express his gratitude to his seniors for what they had said. The subject of cataract, he continued, is so vast that it is impossible to end any discussion, once it is started; neither is it possible to generalize on any division of the subject. Cataract is so intimate and personal, no two patients presenting exactly the same conditions, that no two surgeons could proceed and manage their patients in the same manner, and one may succeed where the other fails, although each has expended his best skill. Dr. Chance wished to call special attention to the direction given by Dr. Fisher that when pressure has once been begun for the expulsion of the lens, it must be maintained evenly, persistently, and without the slightest relaxation, until the entire lens has been extruded. The speaker recalled the manner in which Maitland Ramsey conducted this point in his technic. In several extractions that Dr. Chance had seen that accomplished surgeon perform while visiting in Glasgow, a few years back, Ramsey had used a glass rod with a hook-shaped end, curved somewhat to conform exactly to the curve of the lens. When adjusted, it applied itself so evenly that by a sort of *tour de maitre* movement, the lens could be brought out entirely.

What Dr. Fisher had said in regard to the effect of allowing a thin sheet of posterior cortex to remain, Dr. Chance could very well second from his own experience during the past winter, and from the observation of several cases in the Wills Hospital. Dr. Zentmayer's reference to the use of unusual instruments designed to prevent serious consequences arising from complications, recalled to the speaker's mind the procedures of some of the distinguished surgeons no longer living. They had always gone prepared to meet any emergency, and the house surgeons were instructed to place a specified number of instruments on the tray. All of the teachers of most of the men now connected with the hospital had used relatively few instruments, seeming to be able to adapt one instrument to various purposes. Certain of them, especially Dr. Norris and Dr. Harlan, were timid in the use of the wire speculum. They preferred to expose the globe by simply holding the lid apart or, at most, to use a Desmarre lid-elevator, up to the point of expressing the lens. From that time on, the lids were held apart by the assistant's fingers. Dr. Chance then recalled how these and others of the surgeons would express the lens by simply pressing on the globe through the lids, for both direct and counter pressure. They so applied the lower lid as to bring out the loose cortical matter at the same time that the dense nucleus was expelled.

In reply to Dr. Risley's question as to which method gave the best results, the pure corneal incision or that with a conjunctival flap, Dr. Chance said that, judging by his observation of the results obtained by the former surgeons, he thought that here again the personal element entered too largely for him to specify the one or the other as being the best method. One surgeon could obtain uniformly brilliant results by means of incisions placed exactly within the corneal limit, while others invariably obtained good results with a corneal flap, although the after astigmatism was usually of a high degree. Dr. Chance considered the point to be aimed at to be the obtaining of a smooth surface, in a good plane, absolutely free from debris.

J. MILTON GRISCOM, Secretary.

COUNTY SOCIETY REPORTS.

COLUMBIA—AUGUST.

This meeting of the Columbia County Society was held at the St. Charles Hotel, Berwick, August 12. There were seventeen members present, and two medical students, President Hensyl in the chair.

Dr. J. W. Bruner reported several interesting cases of cholecystitis, in which he delineated the various symptoms and conditions present, the modes of diagnosis and the surgical treatment of same. He then clearly discussed the subject of differential diagnosis of cholecystitis, appendicitis and intestinal obstruction. Other members took part in the discussion.

Drs. E. L. Davis and T. C. Harter, who recently returned from trips to the Panama-Pacific Exposition, related interesting incidents as witnessed or experienced, the latter speaking of the excellent exhibit by the State Board of Health, under the direction of Dr. Samuel G. Dixon, the efficient commissioner.

LUTHER B. KLINE, Reporter.

WAYNE—JULY.

The Wayne County Society met at Milford, Pike County, July 15, with fifteen members present and visitors including Drs. A. F. Davis of St. Marys, G. T. Rodman of Hawley, H. E. Emerson of Milford, Mrs. W. C. White, the Misses Hunter and Miss Carner.

The guest of honor was Hon. Gifford Pinchot, who, in a concise and appropriate manner, addressed the society at the dinner table.

Drs. George T. Rodman of Hawley and H. E. Emerson of Milford were elected members of the society, and Dr. G. V. Emerson, now an intern in the Philadelphia Hospital, was proposed for membership.

Upon a cordial invitation from Dr. G. W. McCafferty, Jr., the next meeting will be held at Waymart, October 21.

G. W. MCCAFFERTY, JR., Reporter.

WESTMORELAND—AUGUST.

Westmoreland County Society at its August meeting at Greensburg, enjoyed two very capable papers and heartily entered into general discussion of both.

Dr. E. E. Wible of Pittsburgh, under the topic "Conservation of Vision," summed up those elements inimical to the sight. Time was particularly devoted to injuries of the cornea which threatened ulceration and penetration. On the whole it was a paper presented by a specialist to general practitioners and it was successfully presented and received.

"A Study of the Etiological Factors in Pernicious Vomiting" was the title of the second paper of the session. Drs. Lawrence, Bortz and Hill of Greensburg worked out the material for this paper through a series of cases. Extracts of this paper follow: It seems to be the opinion of modern observers that good results in the treatment of pernicious vomiting will be obtained only by detailed study of the individual case, both as regards pathology and metabolism. So far the post-mortem findings seem to demonstrate that death in the majority of cases is due either to fatty metamorphosis and acute yellow atrophy of the liver or to myocarditis. This is our reason for presenting this study of eight cases.

Webster, Lynch and Barrett in their most recent works have demonstrated that the presence of actone or diacetic acid always precedes an increase in the ammonia coefficient so we have depended on it as a guide to whether, in a given case, the coefficient was increased. The variation in the blood pressure in the different cases has been an especially interesting feature. In these eight cases it has been of interest to note that in those in which the blood pressure was decidedly low, and though acetone, diacetic acid, urobilinogen or leucin were present in the urine, the vomiting was always amenable to persistent treatment directed to the cause, without emptying the uterus.

In the one case in which the blood pressure was high and urobilinogen present in the urine (this case being one of fatty degeneration of the liver), the uterus had to be emptied. Whether this is a coincidence or is an actual indication of value is only to be determined by its application to a vast number of cases.

Of the eight cases, two proved to be hysteric, one mechanical, one due to renal impairment and acidosis, one due to hepatic impairment, three due to combined renal and hepatic impairment and one of these showed acidosis. Two cases showed subjective symptoms of myocarditis which was later excluded. The primary results: Seven patients were discharged as cured without emptying the uterus. One case of fatty degeneration of the liver required emptying of the uterus. Of the seven cases in which the patients were discharged cured, two terminated in miscarriage after the fifth month and the remainder went on to full term. Of the five cases that went to full term two were hysteric, one was mechanic, one was renal and one was renal and hepatic. In five toxemia cases three patients had low blood pressure with coincident acetone, urobilinogen or leucin in the urine, and were cured of their vomiting although two of them miscarried some months later. In one toxemic case the patient had a moderate blood pressure with slight acetonuria and went to full term. In one toxemic case the patient had persistent high blood pressure with acetonuria (the case of fatty degeneration of the liver) and the uterus had to be emptied.

Dr. Lewis, at present enjoying a vacation from her hospital service in far-away India, very pleasantly addressed the society and told a tale of interest which touched here, there and everywhere on her work in the East. After all, Pennsylvania, by comparison, seems to be a better sort of "practice ground" than some other parts of the world.

Finally, after donating the sum of twenty-five dollars to the Belgian Physicians' Relief Fund and fighting out the discussion to the last notch, the society adjourned till the September meeting.

D. ALLISON WALKER, Reporter.

YORK—AUGUST.

The York County Society met in the parlor of the Colonial Hotel on August 5. President Shatto called the meeting to order at 1 P.M. In addition to the forty-five members present, the following members of the Montgomery County Society, who motored to York, were guests: Drs. B. F. Hubley, Harry H. Whitcomb, C. H. Mann, H. A. Bostock, Reinoehl Knipe, W. G. Miller, P. H. Corson, and A. H. Read. Dr. Helen Taylor of Philadelphia and B. L. Baker of St. Louis were also present.

The secretary-reporter announced that he had received from the secretary of the state society the new blanks relative to applications for defense against malpractice, and urged the members to request the same, when necessary, without any delay, as a delay of thirty days will deny a member in good standing the privilege of this defense.

Dr. Eisenhower read the report of the Committee on Resolutions and Memoriam relative to Dr. Enos S. Mann of Dallastown, deceased and its publication in the Journal was ordered. Dr. J. C. Atkins, of Red Lion, was elected to serve as first alternate delegate to fill the vacancy caused by the death of Dr. E. S. Mann. Dr. J. A. Melsheimer, of Hanover, was nominated for the office of district censor.

Dr. G. E. Spotz read a most exhaustive paper on "The Management of Prostatic Enlargement," and an instructive paper on "Cystitis in Infancy" was read by Dr. L. M. Hartman. Great care must be employed in the passage of urethral instruments, both in the ease of insertion, and in the cleanliness of the instruments. The urethra should be washed with a boric acid solution before any instrument is passed. Carcinoma of the prostate should always be excluded by careful examination, as it forms a fairly large percentage of enlarged prostates. In attempting to relieve the bladder, a soft rubber catheter should first be employed, followed in the order named by a single-elbow, double-elbow and finally a prostatic catheter. The last named should only be used as a last resort, as it is responsible for many false passages. The local application of heat, or a hot bath, will often relieve a sphincterismus, and aid the passage of the instrument. Dr. Spotz very fully outlined the medical and surgical treatments of this disease. The subject of "Cystitis in Infancy" aroused great interest, owing to its rarity, and the fact that it is so frequently not discovered because it is not looked for. Kerley has never seen a case in a boy, and it is uncommon in girls. It is usually due to infection with the colon bacillus, although a mixed infection may be found. Examination of the urine, obtained by the injection of warm water in the bowel or warm applications of the lower abdomen will clear up a suspicious diagnosis. Pyelitis is rare in children, and is usually due to infection of the pelvis of the kidney by the colon bacillus. The treatment of cystitis is primarily prophylactic. Salol, urotropin and potassium citrate are useful, and irrigation may be resorted to if necessary.

The papers were fully discussed by the guests from Montgomery County, who also took occasion to pay high compliments to the activity of the society as evidenced by the unusually high attendance at the meetings and the character of the scientific program. Dr. B. F. Hubley, president of the Montgomery County Society, who formerly followed his profession in York, officially thanked the society for its reception, and Dr. H. H. Whitcomb, secretary of the Montgomery County Society, and president of the Secretaries Association, made some very fitting remarks upon medical organization.

Dr. Holtzapple was appointed to fill the unexpired term of Dr. E. S. Mann, upon the Executive Committee.

After the meeting adjourned the visiting physicians were escorted on a brief tour of the city, including an inspection of the York Hospital.

Julius H. Comroe, Reporter.

NECROLOGY.

IN MEMORIAM—JOHN KENDRICK GILMORE, M. D.

(Resolutions on the death of John Kendrick Gilmore, M.D., furnished by the Clinton County Medical Society.)

Whereas, An allwise Providence has deemed wise to remove from our midst by the hand of death our late colleague, Dr. John Kendrick Gilmore, and

Whereas, The Clinton County Medical Society, while feeling that it should be very thankful for its association and acquaintance with our late professional brother, it desires to record its sorrow in its loss to ourselves as well as the public whom he so conscientiously served; therefore be it

Resolved, That in the death of Dr. Gilmore the Clinton County Medical Society has sustained a loss that will be hard to replace. He was a conscientious member and was ready at all times to advance the interests of the society and to give the members the benefit of his own studies as well as his experience. When possible he was always present at its meetings and took a likely interest in its deliberations. Be it also

Resolved, That in his death, the public has lost a faithful physician. Every physical ailment was to him of deep moment and concern; a call from one so distressed was answered by him and his best efforts and skill used to relieve them. One whose every effort, regardless of time or trouble was at the call of those sick or in distress. Be it also

Resolved, That we as members of the Clinton County Medical Society extend to the bereaved widow of our late brother, our most sincere sympathy and commend her to a higher power for a consolation that He alone is able to grant, and assure her that our late brother was beloved by every member for his ability as well as for his pleasant disposition. Be it also

Resolved, That a copy of these resolutions be spread on the minutes of the society and a copy be furnished the Journal as well as the local papers for publication and a copy be engrossed and be presented the widow of our brother.

Thomas E. Roach.
Charles L. Fullmer.
Orrin H. Rosser.
Committee.

The Journal is glad to publish county society reports when promptly furnished. They should be brief presentations of scientific facts and professional news. Tell what not how the author says it. For various reasons it is sometimes impossible to publish a report in the first issue following its receipt.

PHILADELPHIA SESSION.

CLINICS.

The local committee has planned systematic clinical work in most of the fifty-four hospitals of the city for Monday, Friday and Saturday, the clinics to begin at 9 A.M. Full program of these clinics can be secured at the Bellevue-Stratford Monday morning, and on Thursday afternoon a revised edition will be distributed, bringing the clinics for Friday and Saturday entirely up to date.

TRANSPORTATION.

Now that there is so much latitude connected with the use of the regular mileage book (any number can travel on one book and no restriction is placed on the sale of remaining mileage), it is the best and often the cheapest method. Members are advised to look up the mileage from their home station to Philadelphia. The certificate plan is the only special one offered by the railroads, but its advantages are so few and its inconveniences so many that no request has been made for it. Many are planning to go by automobiles.

SCIENTIFIC PROGRAM.

GENERAL MEETING.

BALL ROOM.

TUESDAY, SEPTEMBER 21, 10 A.M.

Called to order by the President.
EDWARD B. HECKEL, Pittsburgh.

Prayer by REV. MARCUS A. BROWNSON, Philadelphia.

Address of Welcome.
HON. RUDOLPH BLANKENBURG, Mayor of Philadelphia.

Address of Welcome.
E. E. MONTGOMERY, President of the Philadelphia County Medical Society.

Presentation of Program and Announcement of Entertainments.
J. TORRANCE RUGH, Chairman of the Committee on Arrangements.

Introduction of Delegates from other Societies.

Installation of the President Elect.

1. President's Address.
JOHN B. MCALISTER, Harrisburg.

2. Report of the Cancer Commission.
JONATHAN M. WAINWRIGHT, Scranton.

3. Evil Effects of Delayed Operation in Malignancy. (15 min., illustrated with lantern slides.)
CHRISTIAN B. LONGENECKER, Philadelphia.

OUTLINE. Cause: Physicians approach the diagnosis of early malignancy with much reserve; patients themselves suggesting possible malignancy frequently advised to wait for more definite symptoms, or placed on palliative treatment. Effect: After undue delay, operation more difficult and less sure: chances for recovery lessened; recurrences much more likely; hence, mortality increased from ten to ninety per cent. Remedy: Special instruction in malignancy; continuance of the campaign of education among physicians as well as the laity, so that both may get in closer touch.

Discussion on papers 2 and 3 opened by JOHN G. CLARK, Philadelphia, and FRANK F. SIMPSON, Pittsburgh.

4. Pennsylvania's Relation to Industrial Safety and Health (by invitation).
JOHN PRICE JACKSON, Commissioner of Labor and Industry of Pennsylvania, Harrisburg.

Discussion opened by FREDERICK L. VANSICKLE, Olyphant.

(An adjourned meeting of the American Academy of Medicine for the election of officers and the transaction of any necessary business will be held immediately after adjournment of the General Meeting.)

TUESDAY, SEPTEMBER 21, 8 P.M.

SCOTTISH RITE HALL, BROAD AND RACE STREETS.

Moving Pictures.

Microscopic Phenomena.
ALLEN J. SMITH, Philadelphia.

Lung and Heart Conditions.
H. R. M. LANDIS, Philadelphia.

Nervous Disease Films.
CHARLES K. MILLS and T. H. WEISENBURG, Philadelphia.

WEDNESDAY, SEPTEMBER 22, 9:30 A.M.

5. Diagnosis of Tubal Pregnancy; a Critical Study of Seventy-five Consecutive Cases (12 min.).
ALFRED HEINEBERG, Philadelphia.

OUTLINE. Diagnosis of tubal pregnancy before any interruption in course of pregnancy occurs, and after its course has been disturbed in one of several ways. Brief review of changes which take place in the pelvic structures and the embryo before any disturbance takes place. Symptoms and physical signs leading to diagnosis before rupture or abortion. Causes of failure to make diagnosis in this stage. Classification of cases, in which interruption in pregnancy has occurred, into "tragic and non-tragic." Pathological changes during and after interruption in each type. Symptomatology and diagnostic signs. Differential diagnosis from ordinary abortion, twisted pedicle of an ovarian cyst, pyosalpinx, appendicitis and other conditions causing peritonitis.

Discussion opened by WILLIAM R. NICHOLSON and JOHN A. MCGLINN, Philadelphia.

6. Scopolamin-Morphin Anesthesia in Obstetrics.
JAMES R. FREELAND, Pittsburgh.

OUTLINE. Review of seven years' experience with scopolamin as an anesthetic in labor and reference to a paper written in association with Dr. Solomons in 1910. Statistical review of cases in reference to the effect of scopolamin in relieving pain, its effect on uterine contractions and duration of labor, its effect on the child, and the temporary and permanent mental effect on the mother. Conclusions in reference to its practicability, efficiency and safety.

Discussion opened by BARTON COOKE HIRST, Philadelphia.

7. Pregnancy and Tuberculosis with the Report of a Series of Cases.
CHARLES C. NORRIS, Philadelphia.

OUTLINE. Influence of pregnancy in the course of pulmonary tuberculosis, during early months of pregnancy, during late months of pregnancy, during puerperium and during lactation. Condition of children born of tuberculous mothers. Treatment, prophylactic, hygienic and dietary. Discussion of advisability of emptying uterus. Analysis of a series of cases. End results. Conclusion.

Discussion opened by H. R. M. LANDIS, Philadelphia.

8. Some General Principles in Surgical Diagnosis.
J. CHALMERS DACOSTA, Philadelphia.

9. Hospital and Home Isolation (by invitation). (20 min.)
DENNETT L. RICHARDSON, Providence, R. I.

OUTLINE. Exact cause of many infectious diseases unknown, but considerable definite knowledge of how virus escapes from body. How long viruses live outside the human body, whether they multiply, and under what conditions are they a source of actual infection. There are available data, the accumulation of twenty-five years of experience, which practically rules out atmospheric contagion as of any real importance. Facts from French, English and American hospitals on this point. Underlying principles of control of infectious diseases by home isolation the same as in the hospital. Utilize simple methods of protection of other members of family in place of elaborate hospital equipment. The human being himself the chief distributer of disease directly. Three sources of disease in the community are persons who are recognizedly sick with some infectious disease: missed cases, so mild a sickness that patients pursue their avocations; and the carriers. Field work.

10. Quarantine of the Home as Practiced by the Department of Health in Pennsylvania.
Samuel G. Dixon, Harrisburg.

Outline. Reasons for the various types of quarantine established, details of community quarantine and domiciliary quarantine, differences between modified quarantine and absolute quarantine, conditions under which wage earners' permits may be granted with quarantine over the premises, etc., the changes in quarantine under the new law.

Discussion of papers 9 and 10 opened by S. Lewis Ziegler, Philadelphia.

Thursday, September 23, 2 p.m.

11. An Unappreciated Form of Pneumothorax.
Charles Rea, York.

Outline. So far as known, an unreported variety of the condition. Due to rupture of air vesicles from a tearing of the pleura; probably always due to a previous pleurisy resulting in an adherence of the two surfaces. Frequency. Condition most familiar to radiologists. Symptoms and signs. Differential diagnosis. General care all the treatment that is indicated. Prognosis favorable in majority of cases.

12. Therapeutic Pneumothorax in Pulmonary Tuberculosis. Alexander Armstrong, White Haven.

Outline. Above name more expressive of the procedure than compression of lung or artificial pneumothorax. Rationale of measure for relief of pulmonary tuberculosis. Length of time procedure has been on trial; no longer in experimental stage. Technic, major operation, strict asepsis enjoined. Type of case best suited for treatment. Plea for its use in both earlier and later stage cases. Analysis of fifty cases treated during a period of three years. Cures by this treatment in writer's experience. Procedure a fixed place in our therapeutics; chance to many cases heretofore considered hopeless; psychologic effect good on patient, incentive to make harder fight, no ill effects following operation; not difficult to get permission and patients often request the doctor to continue treatment.

Discussion on papers 11 and 12 opened by Charles M. Montgomery and Isadore Kaufman, Philadelphia.

13. Medical Education in China (by invitation). (15 min.) James B. Neal, Tsinan, China.

14. A Case of Cholesteatoma of the Spinal Cord.
William Egbert Robertson and Samuel D. Ingham, Philadelphia.

Outline. A young woman, aged nineteen, first symptoms when fifteen, languor, anemia, slowly progressive loss of flesh, intermittent insomnia, motor and sensory disturbance of the left leg, and later of the right leg, variable in character, to some extent, with obstinate constipation and involvement of the bladder, with marked cystitis at the time she came under observation, and a peculiar mixed spastic and steppage gait. Operation by Dr. W. W. Babcock, removal of a tumor 5 1-2 inches long. Microscopically: A cholesteatoma.

15. A Study of the Toxicity and the Comparative Therapeutic Effect of Mercury and Salvarsan in Experimental Trypanosomiasis.
Jay F. Schamberg, John A. Kolmer and R. W. Raiziss, Ph.D. (by invitation), Philadelphia.

Outline. Studies of the toxicity of the soluble and insoluble mercurial compounds; of distribution of mercury in animal body and resultant pathological changes. Effect on trypanosome infections of various mercurial salts. Studies of toxicity of salvarsan. Investigation of its trypanicidal influence. Chemistry of salvarsan. Interpretation of above findings and their application to treatment of syphilis.

16. Factors Influencing the Present Mortality in Peritonitis. (15 min.)
Damon B. Pfeiffer, Philadelphia.

Outline. Marked reduction in the mortality during past few years due to recognition of the principle of early operation and to evolution of improved operative methods. Further reduction depends upon a more general adoption of these measures and upon correct preliminary treatment. Present medical treatment founded upon incorrect reasoning and older teaching, and responsible for a large part of present mortality. Practitioners should adopt methods which surgeons have found to be most efficacious in general treatment of peritonitis. Simplicity and rationale of these methods.

Discussion opened by George G. Ross, Philadelphia.

17. The Value of the Psychopathic Hospital.
Daniel J. McCarthy, Philadelphia.

Discussion opened by James Hendrie Lloyd, Philadelphia.

18. The Treatment of Exophthalmic Goiter by Means of the Roentgen Rays, with Lantern Slide Demonstration.
George E. Pfahler and J. Donald Zulick, Philadelphia.

Outline. Symptoms due to hypersecretion of thyroid; disease often associated with enlargement of the thymus. General effect of Roentgen rays in large doses is production of atrophy and a suppression of glandular activity. Results of treatment are generally good, and without doing harm. First results to be noted are decrease in pulse rate, reduction of nervousness, and increase in weight. Treatment must not be carried to point of producing hypothyroidism.

Discussion opened by Ardrey W. Downs, Philadelphia.

SECTION ON MEDICINE.

BALL ROOM.

Officers of Section.

Chairman—Thomas Grier Simonton, 5412 Ellsworth Ave., Pittsburgh.

Secretary—J. Wesley Ellenberger, 922 North Third St., Harrisburg.

Executive Committee—Charles H. Miner, Wilkes-Barre; James D. Heard, Pittsburgh; Alfred Hand, Jr., Philadelphia.

Tuesday, September 21, 2 p.m.

1. Opening Address by the Chairman.
Thomas G. Simonton.

2. Clinical Findings of Foreign Bodies in the Air Passages of Children.
Henry T. Price, Pittsburgh.

Discussion opened by Chevalier Jackson, Pittsburgh, and D. Braden Kyle, Philadelphia.

3. Pyelitis in Infancy. Fred E. Ross, Erie.

Outline. History of the disease. Study of twelve cases.

Discussion opened by George E. Holtzapple, York.

4. Treatment of Tuberculous Peritonitis: Medical *versus* Surgical.
Theodore J. Elterich, Pittsburgh.

Outline. Practical importance of treatment of tuberculous peritonitis. Results following laparotomy probably due to same general methods employed in medical treatment. Cases in which surgical interference is contraindicated. Hygiene, diet, local and internal remedies.

Discussion opened by John F. Sinclair, Philadelphia.

5. The Incidence and Mortality Rates from the Communicable Diseases of Childhood; with Discussion as to the Influence Exerted on These Rates by Public Health Control.
B. Franklin Royer, Harrisburg.

Discussion opened by A. A. Cairns, Philadelphia.

6. The Administration of Antitoxin in Diphtheria.
Samuel S. Woody, Philadelphia.

Outline. A study of 600 cases of clinical diphtheria. Methods of administration of the serum, subcutaneous, intravenous, intramuscular. Influence of the intramuscular method upon death rate, complications and serum sickness.

Discussion opened by M. H. Fussell, Philadelphia.

7. The Practical Value of the Schick Toxin Reaction in Diphtheria.
John A. Kolmer, Philadelphia.

Outline. Mechanism of toxin reaction. Investigation by author on true and pseudoreaction. Practical value of toxin reaction in diagnosis of diphtheria. Detection of susceptibility to diphtheria as a guide in administration of antitoxin for prophylactic and therapeutic purposes.

Discussion opened by Henry D. Jump, Philadelphia.

8. The Results of the Examination of the Cultures from the Throats of Infants and School Children. George R. Moffitt, Harrisburg.

Outline. Varieties of organized forms found. Persistence of bacteria in apparently cured cases. Efficacy of lactic acid, as in buttermilk, in clearing throats of carriers. The organisms in Vincent's angina and organisms found in membranous croup.

Discussion opened by Seth A. Brumm, Philadelphia.

Wednesday, September 22, 2 p.m.

Reading of Minutes.

Report of Executive Committee.

Election of Officers.

9. The Heart of the Athlete. Robert N. Willson, Jr., Philadelphia.

Outline. Striking number of recent deaths among former athletes. Methods of estimating harm sustained in competitive athletics. Fallacy of methods based upon visual or actual measurements of size of heart after exercise. Damage to cardiac structure often not immediately apparent. Methods of estimating limits of safety and danger in strenuous competitive exercise. Lantern slides.

Discussion opened by Judson Daland, Philadelphia.

10. The Criteria Underlying Prognosis in Cardiac Diseases. James E. Talley, Philadelphia.

Outline. Damaged heart under stress of anesthesia and operation, or acute diseases. Outlook in various myocardial and endocardial lesions.

Discussion opened by Joseph Sailer, Philadelphia.

11. The Electrocardiogram; Its Value as an Aid in Diagnosis.
James D. Heard, F. B. Utley, and A. P. D'zmura, Pittsburgh.

Outline. Diagnosis of certain disturbances of the cardiac mechanism must rest largely or entirely upon the study based upon graphic records. Electrocardiogram *versus* polygraphic tracing. Description of the electrocardiograph; its use; character of information furnished; limits of applicability. Exhibition of curves. Lantern slides.

Discussion opened by Edward B. Krumbhaar, Philadelphia.

12. Significance of Cardiac Pain. David Riesman, Philadelphia.

Outline. Cardiac pain causes alarm. Importance of correct interpretation of cause. Anatomic basis of cardiac pain. Etiologic factors. Significance. Prognosis.

Discussion opened by Lawrence Litchfield, Pittsburgh.

13. Some Points in the Treatment of Myocarditis. James M. Anders, Philadelphia.

Outline. Influenced by type; acute or chronic, parenchymatous or interstitial. Influenced by cause; rheumatism, specific fevers, syphilis, etc. Remedies are rest, antirheumatics, antisyphilitics, cardiac stimulants, massage, resistive exercises. Inefficacy of digitalis.

Discussion opened by David Riesman, Philadelphia.

14. Inadequacy of Ordinary Methods of Disinfecting Typhoid Stools. Edgar M. Green, Easton.

Outline. Pathological examinations of typhoid stools after treatment with various chemical germicides seem to show conclusively that short exposure to any chemical disinfectant is inadequate. A five per cent. solution of phenol for instance must be in contact with a well broken-up stool for at least six hours in order to produce proper disinfection. In hospitals particularly it seems likely that stools are thrown into the sewer before proper disinfection has taken place. Wherever possible, especially in hospitals, disinfections of stools should be done by steam in order to be thorough. By this method a stool can be disinfected and a bedpan thoroughly sterilized at the same time.

Discussion opened by B. Franklin Royer, Harrisburg.

15. Some Remarks on Hemoptysis as a Symptom of Pulmonary Tuberculosis and Its Treatment. Elmer H. Funk, Philadelphia.

Outline. Frequency of tuberculosis as a cause of blood spitting. Frequency of hemoptysis in pulmonary tuberculosis. Relation of hemoptysis to age, sex and extent of lesion. Clinical classification of cases. Prognosis. Treatment. Study based upon 373 advanced cases of pulmonary tuberculosis.

Discussion opened by Clarence R. Phillips, Harrisburg.

16. The Use of Tuberculin and Other Bacterial Preparations (Bacterins, Vaccines, etc.) by the Mouth. Solomon Solis-Cohen, Philadelphia.

Outline. Work of Latham, Spitta and Inman. Personal observations in the last five years. Results equal to those obtained by hypodermic method.

Discussion opened by John A. Roddy, Philadelphia.

Thursday, September 23, 9:30 a.m.

Reading of Minutes.

17. Thyroid Therapy. William Harmar Good, Philadelphia.

Outline. Variability in organic products. Abnormal thyroid activity often associated with the reproductive function in women. Glandula thyroidea sicca the proper term. U.S.P. dose of four grains dangerously excessive.

Discussion opened by Myer Solis-Cohen, Philadelphia.

18. Pyorrhea and Its Complications. Allen J. Smith, Philadelphia.

Discussion opened by Alfred Stengel, Philadelphia.

19. Chronic Arthritis. Thomas McCrae, Philadelphia.

Outline. Etiology. Early diagnosis.

Discussion opened by William E. Robertson and A. Bern Hirsh, Philadelphia.

20. The Tertiary Manifestations of Syphilis as Seen in a General Medical Ward. John H. Musser, Philadelphia.

Outline. Type of cases studied. Results of routine Wassermann examination of blood serum of each patient admitted to ward. Great frequency of cases of chronic disorders due to syphilis. Illustrative cases showing variability of lesions. Method of treatment employed. Results of treatment.

Discussion opened by Joseph Sailer, Philadelphia.

21. The Influence of High and Low Protein Intake on the Excretion of the Acetone Bodies (Acetone, Diacetic Acid and Betaoxybutyric Acid) in the Urine in Diabetes Mellitus. Jacob Rosenbloom, Pittsburgh.

Discussion opened by Chauncey L. Palmer, Pittsburgh.

22. The Classification of Diabetes Mellitus. Adolph I. Ringer, New York City.

Discussion opened by Thomas McCrae, Philadelphia.

23. A New Treatment for Acute Bichlorid of Mercury Poisoning. J. Hartley Anderson, Pittsburgh.

Outline. Usual forms and doses. Pathologic anatomy. Analysis of fatal cases. Absorption, distribution, and elimination. Methods of treatment. Irrigation of the colon; physiologic effects. Cases treated to date.

Discussion opened by Horatio C. Wood, Jr., Philadelphia.

Reading of Minutes.

Adjournment.

SECTION ON SURGERY.

CLOVER ROOM.

Officers of Section.

Chairman—Floyd E. Keene, 116 South Nineteenth St., Philadelphia.

Secretary—A. Ralston Matheny, 7032 Hamilton Ave., Pittsburgh.

Executive Committee—Otto C. Gaub, Pittsburgh; John B. Lowman, Johnstown; J. Torrance Rugh, Philadelphia.

Tuesday, September 21, 2 p.m.

1. Chairman's Address: The Significance of Bladder Symptoms in the Presence of Diseases of the Female Pelvic Organs. Floyd E. Keene.

2. A Study of the Muscle Metastasis in Carcinoma of the Breast.
John Speese, Philadelphia.

Outline. The object of the paper is to corroborate or disprove the rationale of the operation for the radical cure of breast carcinoma in which the fascia of the pectoral muscle only is removed. The study is based upon the histological examination of 100 consecutive cases.

Discussion opened by William L. Rodman, Philadelphia.

3. Treatment of Fractures, a Lost Art.
John B. Roberts, Philadelphia.

Outline. Operative habituation may lead to unnecessary disaster. Local option is safe and sane. Nonoperative treatment neglected in recent years. Ancient theory, that loss of rigidity and displacement of fragments only lesions needing treatment, erroneous. Some closed fractures must be incised; some need not, others must not, be so treated and "fixed." Vivisectional carpentry not the sole method of getting good union and good function. Wise surgery recognizes that operative attacks and non-blood-spilling methods have separated, but overlapping, provinces. Mechanical instincts, anatomical knowledge and surgical common sense, the keys to success.

4. The Treatment of Complicated Fractures and Present Opinion of Operative Treatment.
John B. Lowman, Johnstown.

Outline. Should complicated fractures be treated by the open method, if so are the results better? Fractured femurs are best treated by the open method.

Discussion of papers 2 and 3 opened by William L. Estes, Bethlehem.

5. Acute Surgical Diseases of the Pancreas.
John B. Deaver, Philadelphia.

Outline. Acute pancreatitis, the classical type described by Fitz in which there is hemorrhage and extravasation of pancreatic juice resulting in shock, intoxication and local destruction of tissues with gangrene or suppuration. Surgery has revealed that the lesser inflammatory lesions are common. Not sufficiently pointed out that acute pancreatitis without the severer manifestations of hemorrhage and extravasated ferments is not uncommon. Many cases operated on, unrecognized, and attributed to disease of the biliary tract. Treatment not yet standardized because of lack of knowledge of its exact cause and the mechanism of its production. A result of infection or duct obstruction or a combination of the two. Operative intervention should aim to establish the cause and relieve it. Infective pancreatitis secondary to disease of the biliary tract should be treated by the measures adopted to relief of biliary infection. Obstructive pancreatitis due to stone in the papilla of Vater or to other abnormality of the papilla demands relief of the obstruction. In ultra-acute cases the question of operability enters strongly and may forbid everything except simple drainage.

Discussion opened by Ernest Laplace, Philadelphia.

6. Pancreas and High Intestinal Obstruction.
J. Edwin Sweet, Philadelphia.

Outline. Cause of death in an acute pancreatitis and in high obstruction is the same. Proteolytic ferments of the pancreas. Results of investigations. Conclusions.

Discussion opened by J. Chalmers DaCosta, Philadelphia.

7. Management of Toxic Goiter.
Charles H. Frazier, Philadelphia.

Outline. Necessity for discrimination between early gravely acute and terminal phases in selection of treatment. Thymus enlargement as factor to be considered. The early and late results. The after-treatment and the prevention of recurrences.

Discussion opened by John DeV. Singley, Pittsburgh.

8. Rectal Anesthesia in Thyroidectomy.
Walter Lathrop, Hazleton.

Outline. Preliminary remarks on oil ether anesthesia, Gwathmey's method; use of chlorotone; paraldehyd; or novocain-adrenalin; with preliminary dose, and the mixture finally used. Contraindications; Personal experience; Conclusions.

Discussion opened by John W. Luther, Palmerton.

Wednesday, September 22, 2 p.m.

Reading of Minutes.

Report of Executive Committee.

Election of Section Officers.

9. Surgical Treatment of Ascites.
Robert T. Miller, Jr., Pittsburgh.

Outline. Proper time for surgical intervention. Review of the various surgical treatments. Method of draining the ascitic fluid into the blood stream by implantation of the saphenous vein into the peritoneum. Report of cases.

Discussion opened by James D. Heard, Pittsburgh.

10. Fulguration Treatment of Bladder Papilloma.
Alexander A. Uhle and William H. Mackinney, Philadelphia.

Outline. Benign and malignant papilloma, the relation of their pathology to the selection of proper form of treatment. Clinical features of tumors that prove amenable to fulguration. Technic. Results in benign and malignant papilloma. Complications. Recurrences.

Discussion opened by John L. Laird, and Benjamin A. Thomas, Philadelphia.

11. Membranous Pericolitis or the Pericolic Membrane (by invitation). (20 min.)
Jabez N. Jackson, Kansas City, Mo.

Outline. A physiological and clinical entity. Of rare occurrence; many cases are improperly so classed. The genuine type presents typical symptoms and should be diagnosed. Pseudo cases should be let alone. Some interesting problems of etiology and their bearing on treatment. Treatment, medical and surgical.

Discussion opened by George P. Müller, Philadelphia.

12. Treatment of Empyema.
Edward Martin, Philadelphia.

Outline. The first operation on an empyema is too often not the last. An empyema should not become chronic: Drainage usually employed inadequate. Author's method.

Discussion opened by John B. Carnett, Philadelphia.

13. Treatment of Puerperal Infection and Septic Abortion. John M. Fisher, Philadelphia.

Outline. Conservative views. Radical interference. Bacteriology. Treatment of special symptoms. Conclusions.

Discussion opened by Thomas B. Carroll, Pittsburgh.

14. Prevention of Fecal Fistula in Suppurative Appendicitis. Donald Guthrie, Sayre.

Outline. Technic of operation. Employment of drainage. Postoperative treatment. Review of cases.

Discussion opened by Claude L. Bradford, Pittsburgh.

15. Treatment of Cancer by the Use of Radium in Conjunction with Surgery.
Guy C. Boughton, Erie.

Outline. The treatment of nonoperative cases of malignancy and the use of radium following surgical treatment. Case reports.

Discussion opened by Russell H. Boggs, Pittsburgh.

THURSDAY, SEPTEMBER 23, 9:30 A.M.

Reading of Minutes.

16. Surgical Treatment for Absent Vagina.
E. E. MONTGOMERY, Philadelphia.

OUTLINE. The ethical question. Previous operations. Author's operation. Lantern slide demonstrations.

Discussion opened by BROOKE M. ANSPACH, Philadelphia.

17. Morbidity in Appendicitis.
GEORGE P. MÜLLER, Philadelphia.

OUTLINE. An analysis of 200 consecutive cases of acute appendicitis. A discussion of the relation of the technic of operation to the mortality and to the postoperative complications, especially obstruction, hernia and adhesions.

Discussion opened by JOHN A. KLUMP, Williamsport.

18. Technic of Applying Heat in Treatment of Inoperable Carcinoma of Uterus (by invitation). (20 min.) JAMES F. PERCY, Galesburg, Ill.

OUTLINE. The following important facts in the technic of applying heat in inoperable cancer of the uterus will be emphasized in the paper. Open the abdomen. Apply a low degree of heat, *i. e.* less than a burning temperature through the vagina until the mass in the pelvis becomes so hot that it can not be held by the surgeon's hand encased in a medium-weight rubber glove. All the fixed pelvic tissues must be made movable and greatly reduced in mass. The use of the vaginal dilator, the water-cooled speculums and the electric heating iron.

Discussion opened by JOHN G. CLARK, Philadelphia.

19. Treatment of Undescended Testes.
JOHN H. GIBBON, Philadelphia.

OUTLINE. The preoperative treatment and the operative technic. The end results of reported cases.

Discussion opened by ROBERT G. LECONTE, Philadelphia.

20. Operation for Inguinal Hernia.
FRANCIS T. STEWART, Philadelphia.

OUTLINE. Preparation. Importance of bilateral examination, and exploration during operation. Removal of sac. Sliding hernia. Hernia of bladder. Closure of wound. Transplantation of flaps. After care.

Discussion opened by J. S. RODMAN, Philadelphia, and E. W. MEREDITH, Pittsburgh.

21. The Operative Treatment of Intestinal Cancer.
LEVI JAY HAMMOND, Philadelphia.

OUTLINE. When should the operation of colectomy be completed in one stage, which is the one of choice? When in two stages, and when must colostomy alone suffice? Analysis of cases operated on

Reading of Minutes.

Adjournment.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

RED ROOM.

OFFICERS OF SECTION.

Chairman—ROBERT MILLIGAN, Westinghouse Building, Pittsburgh.
Secretary—JOHN F. CULP, 410 North Third St., Harrisburg.
Executive Committee—WENDELL REBER, Philadelphia: CHEVALIER JACKSON, Pittsburgh; HOWARD F. HANSELL, Philadelphia.

TUESDAY, SEPTEMBER 21, 2 P.M.

1. Opening Address by the Chairman.
ROBERT MILLIGAN.

2. The Vaccine Treatment of Chronic Suppurative Otitis Media.
GEORGE M. COATES and MATTHEW S. ERSNER, Philadelphia.

OUTLINE. Résumé of the literature showing value of vaccines in chronic running ears. Class of cases in which success may be looked for. Combination with other methods of treatment. Comparative values of autogenous, stock (laboratory or commercial) and sensitized. Dosage. Report of series of cases and individual cases of interest. Dangers and contraindications. Conclusions.

Discussion opened by JOHN A. KOLMER, Philadelphia.

3. Ethmoiditis. Its Various Effects and Their Probable Prevention; or, When Fully Established, Their Possible Cure.
J. LESLIE DAVIS, Philadelphia.

OUTLINE. Ethmoid cells may cause greatest variety of complications, secondary and reflex pathologic processes, probably preventable, or amenable to treatment in incipiency, and even when established may be mitigated by surgical measures, if not cured. Predisposing factors, local and constitutional. Acute infections, symptoms and pathology. Ultimate effects of repeated infections, long-continued low-grade inflammations and chronic suppurations. Reflex symptoms, embracing all forms of neuralgic pain, headache, vertigo, dizziness, ocular disturbance, tinnitus aurium, etc., and their significance. Prophylaxis and treatment.

Discussion opened by GILBERT D. MURRAY, Scranton.

4. Syphilis of the Nose and Throat.
CHARLES P. GRAYSON, Philadelphia.

OUTLINE. Regrettable frequency and severity of syphilitic involvement of nose and throat. Prevention quite possible. Occasional instances of primary infection. Importance of clinical diagnosis. Atypical features of many cases. Mixed infections. Treatment, prophylactic and curative.

Discussion opened by GEORGE B. WOOD, Philadelphia.

5. Syphilis of the Ear.
S. MACCUEN SMITH, Philadelphia.

OUTLINE. The importance of an accurate diagnosis, particularly in the presence of labyrinthine involvement. Worth of Wassermann reaction. Value and danger of salvarsan injections.

Discussion opened by E. B. GLEASON, Philadelphia.

6. Visual Disturbances Occurring in Pregnancy.
GLENDON E. CURRY, Pittsburgh.

OUTLINE. Visual disturbances in pregnant women more frequent than supposed. Mostly caused by toxic retinitis or neuroretinitis. Dropsical or dry variety, the former less serious, due to nonelimination of chlorids; the latter caused by retention of urea may be associated with structural changes. Albuminuria significant but not necessarily present. Ophthalmoscopic observations important. Serious nephropathies may be avoided when prompt diagnosis is made. Prognosis good when decisive action is taken to end toxemia.

Discussion opened by BURTON CHANCE, Philadelphia.

7. Uveitis. GEORGE B. JOBSON, JR., Franklin.

OUTLINE. Causes, dietetic, toxic or infectious. Characteristic symptoms. Moderate deepening of anterior chamber, uncontracted pupil, haziness of cornea and aqueous humor, a precipitate of opaque dots on posterior part of cornea, generally arranged with apex pointing upward. Tension may be increased in first stage. Treatment depends upon type or character of disease. Locally, the author depends principally upon subconjunctival injections of salt solution, dionin and application of high-frequency electric current.

Discussion opened by WILLIAM CAMPBELL POSEY, Philadelphia.

8. Intrarectal Use of Sodium Salicylate in Uveitis, with Report of Cases.
J. FERDINAND KLINEDINST, York.

OUTLINE. Value of intrarectal administration of sodium salicylate in large doses. Ease of administration, with rapid absorption of drug. Quick systemic effects and lessening of symptoms of disease. Report of cases.

WEDNESDAY, SEPTEMBER 22, 2 P.M.

Reading of Minutes.

Report of Executive Committee.

Election of Section Officers.

9. Some Points on the Applied Anatomy of the Temporal Bone (by invitation). (20 min.)
D. GREGG METHENY of the Daniel Baugh Institute of Anatomy, Philadelphia.

OUTLINE. Size and position of the mastoid antrum. Course and position of the facial nerve and chorda tympani. Position and course of the lateral sinus. Position and relations to each other of the semicircular canals.

Discussion opened by S. MACCUEN SMITH, Philadelphia.

SYMPOSIUM ON THE EYE.

10. Heterophoria and Its Management.

WILLIAM W. BLAIR, Pittsburgh.

OUTLINE. Prevalence of heterophoria accompanying refractive errors; importance of routine testing of the muscle balance; methods employed; important part played by the fusion faculty in the development of faulty muscle balance; methods of treatment.

Discussion opened by WILLIAM ZENTMAYER, Philadelphia.

11. The Operative Treatment of Strabismus.

HOWARD F. HANSELL, Philadelphia.

OUTLINE. Cases incurable by other means curable by operation, and operation to be chosen. Creation or restoration of binocular vision a result to be gained only when fusion sense exists or may be developed and vision of eyes approximately the same. Patient and surgeon usually satisfied with correction of deformity. Success depends upon causes which have brought about malposition of eye in orbit, correct estimation of relation between contracting and antagonistic muscles and technic of surgical procedure. Operation varies according to exigencies of individual case, and comprises single and double advancement, with or without tenotomy of one or more opposing muscles. Internal, external and vertical strabismus.

12. Nonoperative Treatment of Squint.

WENDELL REBER, Philadelphia.

OUTLINE. Largely confined to children under ten years of age. Convergent strabismus in children of three varieties: Binocular or alternating, intermediate, and monocular. Strictly monocular form not as prevalent in children under ten as over that age. Nonoperative treatment consists in the best possible refraction under thorough cycloplegia; bifocal glasses; fusion training with amblyoscope, diploscope, Harman's diaphragm apparatus (or modified bar reading), the ordinary stereoscope with special and general pictures, the use of the monocular binder, and the use of atropin in one or both eyes.

Discussion on papers 11 and 12 opened by JAMES THORINGTON, Philadelphia.

13. Ophthalmia Neonatorum. The Exclusive Use of Iced Normal Salt Solution in the Treatment of Gonococcic Purulent Conjunctivitis of the Newborn or Adult. EDWARD B. HECKEL, Pittsburgh.

OUTLINE. Observations, hypotheses and conclusions based upon our definite knowledge of the morphology, cultivation, resistance and pathogenicity of the *Diplococcus gonorrheae* or commonly known gonococcus of Neisser.

Discussion opened by EDWARD STIEREN, Pittsburgh.

14. Bronchoscopy in Suspected Bronchiectasis, Empyema and Pulmonary Tuberculosis.

CHEVALIER JACKSON, Pittsburgh.

OUTLINE. Frequency of bronchiectatic symptoms from unsuspected foreign bodies as the cause of bronchiectasis. Close similarity between symptoms of "drowned lung" condition and late pulmonary tuberculosis. Essential difference between "drowned lung" and pulmonary abscess. Similarity of physical signs of "drowned lung" and empyema. Case reports.

Discussion opened by D. BRADEN KYLE, Philadelphia.

THURSDAY, SEPTEMBER 23, 9:30 A.M.

Reading of Minutes.

15. Etiology and Treatment of Trachoma.

CHARLES S. REBUCK, Harrisburg.

OUTLINE. Definition. Etiology, climatic conditions, racial factors. Specific. Clinical varieties. Symptoms, subjective, objective. Treatment, prophylactic, hygienic, medicinal, surgical. Clinical results of treatment.

Discussion opened by L. WEBSTER FOX, Philadelphia.

16. Scotomas in Diabetes.

EDWARD STIEREN, Pittsburgh.

OUTLINE. Central, paracentral or sectoral; usually permanent but may be transient. Study of a series of cases suggests possibility of their being due to an intoxication of the cortical visual area followed usually by degeneration of certain cortical fibers or cells.

17. A Case of Palsy of the External Rectus Muscle, with Operation.

CLARENCE M. HARRIS, Johnstown.

OUTLINE. Congenital palsy; usual lack of rotation; transplantation of sections of vertical muscles; photographs.

18. Otitic Brain Abscess with Report of an Unusual Case.

WILLIAM HARDIN SEARS, Huntingdon, and GEORGE W. MACKENZIE, Philadelphia.

OUTLINE. Most common of all forms; follows chronic more often than acute ear suppurations; more frequent at certain periods of life. Infection by direct extension; by phlebitis and thrombosis of veins leading to cranial cavity; by passage of infecting organisms through spaces in sheaths of vessels and nerves; rarely by way of aqueductus vestibuli. Location, typical; in temperosphenoidal lobe or cerebellum on side of affected ear, very rarely on opposite side. Capsular formation. Usually single, may be multiple. Symptoms vary in different stages, in acute and chronic types. Pain, vomiting, slow pulse, subnormal temperature, slow cerebration, ocular changes, nystagmus, forms of aphasia and paralysis prominent symptoms, not all or always present in same case. Diagnostic difficulties. Course and prognosis. Report of a case.

Discussion opened by E. B. GLEASON, Philadelphia.

19. Perisinuous Abscess and Sinus Thrombosis.

HARVEY M. BECKER, Sunbury.

OUTLINE. Diagnosis of cases in absence of classical symptoms; importance of early operation in a conservative manner, so as not to disturb Nature's circumscribing and walling-off process; infrequency of thrombosis below bulb when operated on early.

Discussion opened by S. MACCUEN SMITH, Philadelphia.

20. The Rôle of Rhinologist in Hypophyseal Surgery. LYNDON H. LANDON, Philadelphia.

OUTLINE. Introduction. Pituitary lesions from the surgical standpoint. Extracranial routes to the sella. Superiority of endonasal submucous approach. Lesions suitable for this attack. Preparation, operation and aftercare. Complications and results. Lantern demonstration of cases, the anatomy and technic of the various routes.

Discussion opened by THOMAS B. HOLLOWAY, Philadelphia.

21. Internal Medication in the Treatment of "Catarrh" of the Upper Respiratory Tract.

GEORGE R. S. CORSON, Pottsville.

OUTLINE. Commonly overlooked by the laryngologist. Review of various bacteria as an etiologic factor in rhinopharyngitis. Importance of use of bacterial vaccines. Certain drugs are eliminated from the body through the mucous glands. Advantage of a knowledge of this therapeutically. Attention to all organs of the body important.

Reading of Minutes.

Adjournment.

OPEN MEETING FOR WOMEN.

EGYPTIAN HALL OF WANAMAKER'S STORE.

WEDNESDAY, SEPTEMBER 22, 2 P.M.

Chairman—CATHARINE MACFARLANE, Philadelphia.

SYMPOSIUM ON PRENATAL CARE—THE REAL WELFARE OF MOTHER AND CHILD.

In Private Practice.

ELIZABETH L. PECK, Philadelphia.

In Hospital Practice.

LIDA STEWART-COGILL, Philadelphia.

In the Prevention of Infant Mortality.

ELEANOR C. JONES, Philadelphia.

Report of the Work of the Emergency Aid Committee. MRS. J. WILLIS MARTIN, Philadelphia.

PUBLIC MEETING.

THURSDAY, SEPTEMBER 23, 8 P.M.

ROSE ROOM.

The Public and the Profession—A Square Deal.

HENRY B. FAVILL, M.D., Chicago, Chairman of the Council on Health and Public Instruction of the American Medical Association.

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